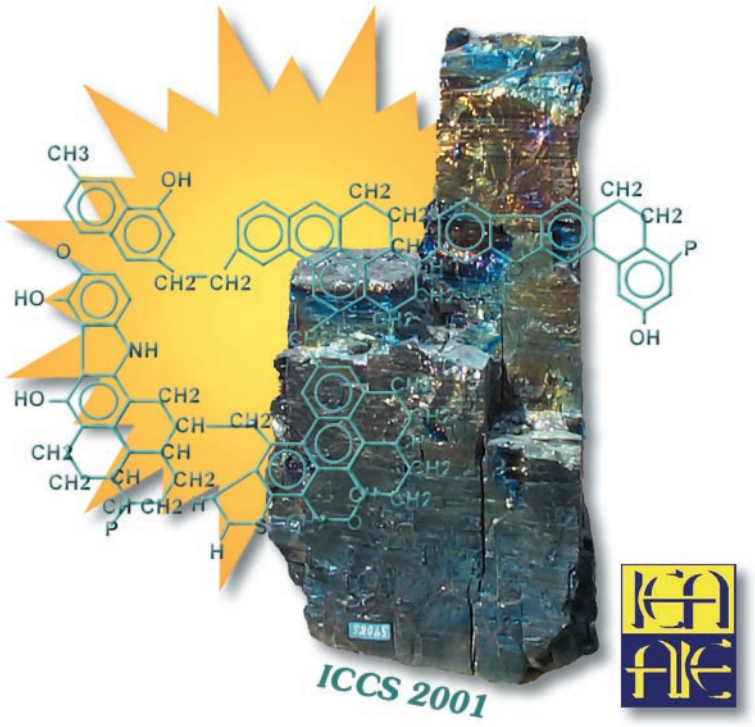
11th International Conference on Coal Science

Exploring the Horizons of Coal



September 30 - October 5, 2001

San Francisco, CA

At a Glance

Sunday

1:00 p.m. - 3:00 p.m. IOC Meeting (by invitation only)
1:00 p.m. - 3:00 p.m. Walking Tour of China Town
5:00 p.m. -7:00 p.m. Welcoming Reception

Monday	Tuesday	Wednesday	Thursday
8:30 a.m. -10:00 a.m. Welcome, Opening Ceremony, and Keynote Address	**8:30 a.m. - 9:15 a.m.** Plenary Session	**8:30 a.m. - 9:15 a.m.** Plenary Session	**8:30 a.m. - 10:00 a.m.** Parallel Sessions
10:00 a.m. - 10:20 a.m. Break	**9:15 a.m. - 10:20 a.m.** Poster Session and Exhibit - Beverages Provided	**9:15 a.m. - 10:20 a.m.** Poster Session and Exhibit - Beverages Provided	**10:00 a.m. - 10:20 a.m.** Break
10:20 a.m. - 12:00 p.m. Parallel Sessions	**10:20 a.m. - 12:00 p.m.** Parallel Sessions	**10:20 a.m. - 12:00 p.m.** Parallel Sessions	**10:20 a.m. - 12:00 p.m.** Parallel Sessions Resume
12:00 p.m. - 1:30 p.m. Lunch	**12:00 p.m. - 1:30 p.m.** Lunch	**12:00 p.m. - 1:30 p.m.** Lunch	**12:00 p.m. - 1:30 p.m.** Lunch and Chairman's Remarks
1:30 p.m. - 3:40 p.m. Parallel Sessions	**1:30 p.m. - 3:40 p.m.** Parallel Sessions	**1:30 p.m. - 3:40 p.m.** Parallel Sessions	**1:30 p.m. - 4:00 p.m.** Parallel Sessions Conclude
3:40 p.m. - 4:00 p.m. Break	**3:40 p.m. - 4:00 p.m.** Break	**3:40 p.m. - 4:00 p.m.** Break	**4:00 p.m. - 4:10 p.m.** Reconvene in Plenary Hall
4:00 p.m. - 5:40 p.m. Parallel Sessions Resume	**4:00 p.m. - 5:40 p.m.** Parallel Sessions Resume	**4:00 p.m. - 5:30 p.m.** Plenary Session	**4:10 p.m. - 4:40 p.m.** Closing Ceremony
Adjourn	**Adjourn**	**7:00 p.m. - 9:00 p.m.** Group Banquet	**4:40 p.m. -** IOC Meeting (Invitation Only)

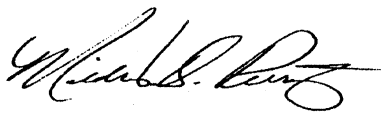
Welcome

Dear Attendees,

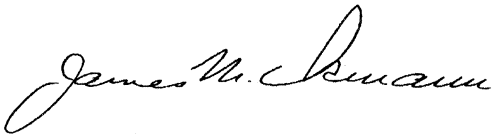
Welcome to the **11th International Conference on Coal Science**. Thank you for coming to the ICCS; and thank you to all IEA member countries, to China (the 1999 host country), to our sponsors, exhibitors, and other contributors who have helped to produce this Conference. The U.S. DOE National Energy Technology Laboratory is honored to host this meeting for the IEA member nations on behalf of the United States of America. After many months of planning, manuscript preparation, and finally, travelling from many parts of the world, we are all assembled together here at the beautiful landmark Palace Hotel in San Francisco, California. One of the most beautiful cities in the world, San Francisco is easy to explore with readily accessible public transportation; and the international flavors of the city invite visitors worldwide to feel at home here.

Over the course of this week, we will learn much about the state of the art in coal science, about scholarship at our various universities and work places around the world, and we will learn much about each other and about how we can work more effectively together. Our energy future is the subject of intensive debate around the world, and the future of coal is a significant element of that debate. Some countries are seeking to expand their electrification projects to improve the quality of life for many people currently living without electricity. Many countries, including the United States, are reorganizing or deregulating their power industries. In the United States, California has suffered rolling blackouts as a result of a drought in the northwest and a capacity crisis in this region of the country; reliability and capacity issues are concerns in some other nations as well. If coal remains a dominant energy resource, fundamental research and development will play a key role to assess the viability of new coal seams, to improve efficiencies, to minimize waste and identify new uses for byproducts, and to ensure environmental performance of technologies that recover and use coal. Here, today, is an unprecedented opportunity to learn from each other and to "Explore the Horizons of Coal."

Sincerely,



Dr. Mildred B. Perry, ICCS Chairman



Mr. James M. Ekmann, Program Chairman

The 12th International Conference on Coal Science, scheduled for November, 2003, will be held in Cairns, Australia. Information on the conference and location is in the back of the brochure, as well as info on this year's conference, sponsors, and committees.

Agenda

Sunday, September 30, 2001

1:00 p.m. - 3:00 p.m. **Walking Tour of China Town**
5:00 p.m. -7:00 p.m. **Welcoming Reception**

Monday, October 1, 2001

General Session 8:30 a.m. - 10:00 a.m.

8:30 a.m. - 10:00 a.m.

Welcome and Opening Ceremony
Mildred Perry, Conference Chairman

International Energy Agency Welcome

TBD - U.S. Department of Energy
National Energy Technology Laboratory

Keynote Addresses:
Isao Mochida, Director of the Institute of Advanced Material Study at Kyushu University

Robert Beck, Executive Director, National Coal Council, Inc.

10:00 a.m. - 10:20 a.m. **Break**

Parallel Sessions 10:20 a.m. - 12:00 p.m.

TRACK 1 - TOPIC A
Advanced Characterization Techniques

Investigation on the Electrical Characterization of Permian Gondwana Coal of Northwestern Bangladesh

J. Podder and S. Majumder
Bangladesh University of Engineering & Technology, Bangladesh

Comparative Study of PY-GC/MS and AP-TPR on Some Lignite Lithotypes

S.P. Marinov and M. Stefanova
Bulgarian Academy of Sciences, Bulgaria
R. Carleer and J. Yperman
Limburgs Universitair Centrum, Belgium

Thermal Study of Mesophase - A Novel Method for Identifying the Graphitizing Carbon

J. Podder and T. Hossain
Bangladesh University of Engineering & Technology, Bangladesh

Size Exclusion Chromatography with 1-Methyl-2-Pyrrolidinone as Eluent: A Structure Independent Method for Molecular Mass Determination

R. Kandiyoti
Imperial College (University of London), United Kingdom

TRACK 2 - TOPIC A
Oxidation & Weathering I

Oxidative Decomposition of Formaldehyde Catalyzed by Coal: Isotopic Labeling Studies

V. Nehemia and S. Davidi
Ben-Gurion University of the Negev, Israel
H. Cohen, Ben-Gurion University of the Negev and NRCN, Israel

Study on Oxygen Consumption Velocity and Influence Factors of Coal Oxidation with Constant Temperature Experiment

X. Jingcai and Z. Xinhai, Mining Dept. of Xi'an University of Science & Technology, P.R. China
D. Jun and G. Lingmei, Energy and Dynatic Institute, Xian Jiaotong University, P.R. China

Emission of Organic Gases From Coal and Changes in Coal Structure Upon Weathering

D. Marder-Regev, Ben-Gurion University of the Negev, Israel
W. Wanzl, DMT GmbH Franz-Fischer Essen Germany , Germany
H. Cohen, Ben-Gurion University of the Negev and NRCN, Israel

Oxidative Decomposition of Formaldehyde by Polyperoxotungstate

H. Taieb, Ben-Gurion University of the Negev, Israel
D. Meyerstein, Ben-Gurion University of the Negev and The College of Judea and Samaria, Israel
H. Cohen, Ben-Gurion University of the Negev and Nuclear Research Center Negev, Israel

Underline denotes author and presenter

Parallel Sessions 10:20 a.m. - 12:00 p.m.

TRACK 3 - TOPIC B
Ash Chemistry I

Behaviour of Ca And Fe in the Consolidation of Boiler Slags

N.V. Russell, F. Wigley, and J. Williamson
Imperial College & The University of Sheffield, United Kingdom

Predicting Ash Particle Size and Composition Distribution Produced During Pulverized-Coal Combustion

S.A. Benson
University of North Dakota, U.S.A.

Dependence of the Behavior of Trace Elements in Coal Combustion on Elemental Modes of Occurrence in the Coal

F.E. Huggins and G.P. Huffman
University of Kentucky, U.S.A.
C. L. Senior
Physical Sciences, Inc., U.S.A.

TRACK 4 - TOPIC B
Liquefaction Reactivity

Study on Reaction Process of Yangcun Coal Quick Liquefaction

K. Ling, Y. Xue, J. Shen, and G. Zou
Taiyuan University of Technology, P.R. China

Hydroliquefaction Characteristics of Majiata Coal and its Individual Macerals

L. Wenhua, H. Weidong, S. Geping, B. Xiangfei, and D. Hewu
Beijing Research Institute of Coal Chemistry, China Coal Research Institute, P.R. China

TRACK 5 - TOPIC C
NO_x Emissions and Controls I

Study on the Technology of Increasing Combustion Efficiency and Decreasing NO_x Emission of Blending Coals

C. Hongwei, L. Yonghua, L. Yanfeng, and L. Jizhen
North China Electric Power University, P.R. China
F. Zhaoxing and L. Zhenzhong
The National Power Plant Combustion Engineering Technology Research Center, P.R. China

Low-Cost Char Briquettes for NO_x Reduction

A. Bueno-Lopez, A. Garcia-Garcia, A. Linares-Solano, and C. Salinas-Martinez de Lecea
University of Alicante, Spain
C. McRae and C.E. Snape
University of Nottingham, United Kingdom

Interaction of Vanadium Species on TiO_2-supported SCR Catalysts

P.G. Smirniotis
University of Cincinnati, U.S.A.

The Effect of Fuel Characteristics on Coal Reburning

P.M. Maly, R. Seeker, V.M. Zamansky, and R. Payne
GE Energy and Environmental Research Corporation, U.S.A.

TRACK 6 - TOPIC D
Coal in Iron Making Processes

Reaction Behavior of Coke Lump in High Temperature Pulverized Coal Reaction

Khairil, D. Kamihashira, and I. Naruse
Toyohashi University of Technology, Japan

Investigation of Coal Behaviour Under Conditions Simulating the Iron Blast Furnace During Coal Injection

N. Paterson
Imperial College of Science, Technology & Medicine (University of London), United Kingdom

Blast Furnace Application of Carbonaceous Rocks and Products of Coal Mining & Preparation Wastes

M. Ja. Shpirt and N. P. Gorjunova
Fossil Fuel Institute, Russia

Fundamental Understanding of Iron Ore Reduction in Coal-Ore Mixtures

G. Liu, V. Strezov, and J.A. Lucas
The University of Newcastle, Australia
L.J. Wibberley
BHP Research & Technology Development, Australia

Agenda

Monday, October 1, 2001

12:00 p.m. - 1:30 p.m. **Lunch**

Keynote Address: Edward Smeloff - Assistant General Manager for Power Policy at the San Francisco Public Utilities Commission

Parallel Sessions 1:30 p.m. - 3:40 p.m.

TRACK 1 - TOPIC A
Physical Structure & Properties I

Structural Evolution of Perhydrous Vitrains During Artificial Coalification

F. Laggoun-Défarge, University of Orléans, France
I. Rannou and N. Cohaut, University of Orléans, France
P. Hall, University of Strathclyde, Scotland
M.J. Iglesias , University of Almeria, Spain
I. Suarez-Ruiz, Instituto Nacional del Carbon (CSIC), Spain

Experimental and Computational Investigations of Coal Structure and Coal-Water Interactions

T. Vu and A.L. Chaffee, Monash University and CRC for Clean Power from Lignite, Australia
I. Yarovsky, RMIT University, Australia

Alteration of Structure and Sorption Activity of Coals at Long Time Interaction with Water

V.V. Simonova., T.G. Shendrik, S.B. Lyubchik, and V.A. Sapunov
Institute of Physical, Organic and Coal Chemistry of National Academy of Sciences of Ukraine, Ukraine

Fundamental Aspects of the Investigation of the Nature of Coal

I.A. Korobetskii and E.K. Nordling
International Center for Coal Research, Russia

New Insights into Coal Structure from the Combination of HRTEM and Laser Desorption Ionization Mass Spectrometry

H.H. Schobert, J.P. Matthews, A.D. Jones, and P.J. Pappano
The Energy Institute and Energy & Geoenvironmental Engineering, The Pennsylvania State University, U.S.A.
R.H. Hurt, Division of Engineering, Brown University, U.S.A.

TRACK 2 - TOPIC A
Oxidation & Weathering II

Emission of Organic Gases via Low Temperature Oxidation of Bituminous Coal

D. Marder-Regev
Ben-Gurion University of the Negev, Israel
H. Cohen
Ben-Gurion University of the Negev and NRCN, Israel

Physical and Chemical Action of Additives Inhibiting Self-Heating of Coal

B. Taraba and R. Peter
Ostrava University, Czech Republic

A Study of the Oxidation Pathways of Coking Coal by Thermogravimetric Fourier Transform Infrared Spectroscopy (TG-FTIR)

J.A. MacPhee, L. Giroux, J.-P. Charland, and J.T. Price
CANMET Energy Technology Centre, Canada

Inhibition of Low Temperature Oxidation and Weathering of Coal

R.V.K. Singh and V.K. Singh
Council of Scientific & Industrial Research, India

Dioxirane (CH_2O_2) Formation During Oxidation of Coal

V. Nehemia and S. Davidi
Ben-Gurion University of the Negev, Israel
H. Cohen
Ben-Gurion University of the Negev and Nuclear Research Center Negev, Israel

TRACK 3 - TOPIC B
Fluidized Bed Combustion

The Co-Firing of Coal and RDF in a New Type ICFB

M.J. Zhao, J.L. Ye, W.R. Bao, Q. Cao, and K.C. Xie
Taiyuan University of Technology, P.R. China

Co-Combustion of High Moisture Content Waste with Coal in a Fluidised Bed

S. Patumsawad, King Mongkuts Institute of Technology, Thailand
K.R. Cliffe, University of Sheffield, United Kingdom

TRACK 4 - TOPIC B
Liquefaction & Hydropyrolysis I

Analysis of Solid Products in Acetylene Production by H_2/Ar Plasma

C. Honggang, Y. Yulin, and X. Kechang
Taiyuan University of Technology, P.R. China

Parallel Sessions 1:30 p.m. - 3:40 p.m.

TRACK 3 - TOPIC B
Fluidized Bed Combustion (Continued)

Limestone Influence on Organic Emissions from Coal AFBC

A.M. Mastral, T. Garcia, M.S. Callen, M.V. Navarro, and J.M. Lopez
Instituto de Carboquímica, CSIC, Spain

Solid Emissions from the Atmospheric Fluidized Bed Combustion of Lignite

I. Sýkorová, and M. Vašícek
Institute of Rock Structure and Mechanics, Czech Republic
J. Smolík and L. Dzumbová
Institute of Chemical Process Fundamentals, Czech Republic
V. Machovic, Institute of Chemical Technology, Czech Republic
J. Kucera and V. Havránek
Nuclear Physic Institute, Czech Republic

TRACK 4 - TOPIC B
Liquefaction & Hydropyrolysis I (Continued)

Development of High Active Limonite Catalyst for Direct Coal Liquefaction

S. Sugita, N. Okuyama, M. Tamura, and K. Shimasaki
Kobe Steel, Ltd., Japan
T. Kaneko, Mitsubishi Chemical Corporation, Japan
E. Makino, Nissho Iwai Corporation, Japan
L. Silalahi, BPP Teknologi, Indonesia
N. Komatsu, New Energy and Industrial Technology Development Organization, Japan

Catalytic Effects of Exchanged Cations on the Hydrogenolysis Reactions of Coals

M. Sugano and K. Mashimo, Nihon University, Japan

Effect of H_2S on the Hydroconversion of Aromatics with Fe, Ni, Ru, Rh, Pd and Pt Catalysts

E. Ogata and K. Horie, The University of Tokyo, Japan
S. Sato, I. Saito, and K. Ukegawa, National Institute of Advanced Industrial Science and Technology, Japan
A. Nishijima, National Institute of Advanced Industrial Science and Technology, Japan

TRACK 5 - TOPIC E
SO_X Emissions and Controls I

Desulfurization of Hot Coal Gas with an Advanced Calcium-Based Sorbent

T.T. Akiti, Jr., K.P. Constant, T.D. Wheelock, and D. Hasler,
Iowa State University, U.S.A

Development of Flue Gas Desulfurization by Cheap Activated Carbon Prepared from Low-Rank Coal in China

Z. Wenhui, L. Chunlan, W. Ling, and Y. Wenrui
Beijing Research Institute of Coal Chemistry, P.R. China
X. Youguo, Nanjing Electric Power Automation Equipment General Factory, P.R. China

Removal of SO_2 by Limestone and Alkaline Abolition in Semi-Dry Flue Gas Desulfurization Process With Powder Particle Fluidized Bed

K. Kato, T. Kuwabara, and T. Tashimo, Gunma University, Japan
Y. Liu, Shenyang Institute of Chemical Technology, P.R. China
X. Ma, New Energy and Industrial Technology Development Organization (NEDO), Japan

Reactor Designed for Continuous Removal of SO_2 in Flue Gas over Pitch Based Activated Carbon Fibers

K.Tada, T. Enjoji, S. Yoon, Y. Korai, and I. Mochida
Kyushu University, Japan
A.Yasukate, Mitsubishi Heavy Industry, Japan
M.Yaoshikawa, Osaka Gas, Japan

SO_2 Retention at Moderate Temperatures by Dispersed $Ca(OH)_2$-Derived CaO: Carbonaceous Versus Inorganic Dispersants

A. Bueno López, A. García-García, J. García Martínez, and A. Linares-Solano, University of Alicante, Spain

TRACK 6 - TOPIC E
Greenhouse Gases & Sequestration I

CO_2 Capture Utilizing Solid Sorbents

R. Siriwardane, M. Shen, E. Fisher, and J. Poston
U.S. Department of Energy,
National Energy Technology Laboratory, U.S.A.

Solid Amine CO_2 Capture Systems

R.W. Stevens Jr., P. Toochinda, and S.S.C Chuang
University of Akron, U.S.A.
M.L. Gray, Y. Soong, and K.J. Champagne
U.S. Department of Energy,
National Energy Technology Laboratory, U.S.A.

AGC Technology for Converting Coal to Pure H_2 and Sequestration-Ready CO_2

R.G. Rizeq, R.K. Lyon, J. West, and V.M. Zamansky
General Electric Energy & Environmental Research Corporation (GE-EER), U.S.A.
K. Das, U.S. Department of Energy,
National Energy Technology Laboratory, U.S.A.

Competitive Sorption of CO_2 and CH_4 on Hard Coals

G. Ceglarska-Stefanska and K. Zarebska
Faculty of Coal & Energy, University of Mining & Metallurgy, Poland

Basic Research on the Separation of Carbon Dioxide from the Flue Gas with Hollow Fiber Membrane

Q.Z. Hou, B. Zhang, X.Y. Zheng, W. Wan, W. Feng, and C.H. Chen, Tsinghua University, P.R. China

3:40 p.m. - 4:00 p.m. Break

Sessions Resume 4:00 p.m. - 5:40 p.m.

TRACK 1 - TOPIC A
Coal Petrography I

Use of Petrography to Evaluate Coal Combustion Behavior

N.Y. Nsakala and R.D. MacWhinnie
ALSTOM Power Inc., U.S.A.

Geochemical Bonds of Oxygen in Low Rank Coal Lithotypes

K. Markova, V. Vladimirov, V. Vuchev, and B. Atanasova
Sofia University, Bulgaria

The Contribution of the Low Organism to the High-Sulfur Coal Formation

D. Shifeng and R. Deyi
China University of Mining & Technology, P.R. China

Microlithotype Analysis of Particulate Coal Using Colour Image Analysis

E. Lester, D.Watts and M. Cloke,
Nottingham University, United Kingdom

TRACK 2 - TOPIC A
Chemistry of S, N, C1 I

Effects of Mineral Matter and Catalyst on Nitrogen Release During Slow Pyrolysis of Coals

Z. Wu, Y. Sugimoto, and H. Kawashima
National Institute of Advanced Industrial Science and Technology, Japan

Elucidation of Hydrogen Mobility in Coal Using a Fixed Bed Flow Reactor -Hydrogen Transfer Reaction Between Tritiated Hydrogen, Coal and Tetralin

A. Ishihara, M. Ifuku, W. Qian, and T. Kabe
Tokyo University of Agriculture and Technology, Japan

Mechanism of Biodepolymerization of Lignite

R.F. Köpsel, H. Schmiers, S. Grosse, and A. Weber
Technical University Bergakademie Freiberg, Germany

TRACK 3 - TOPIC B
Ash Chemistry II

Study on the Combustion Characteristics of Soft Coal and Blending Coals

L. Yonghua, L. Yanfeng, C. Hongwei, and L. Jizhen
North China Electric Power University, P.R. China
F. Zhaoxing and L. Zhenzhong
The National Power Plant Combustion Engineering Technology Research Center, P.R. China

Fusion and Sintering Characterization of Coal Ashes

A. Ots, Tallinn Technical University, Estonia
J. Elkowski, Clausthal Technical University, Deutchland

Behaviors of Ashes in Pressurized Fluidized Bed Combustion of Coal

F. Ishom, K. Iwamoto, Y. Korai, and I. Mochida
Institute of Advanced Material Study, Kyushu University, Japan
N. Misawa, Electric Power Development, Japan
T. Harada, Kyushu Electric Power Co., Ltd., Japan
T. Aoyagi, Nishinippon Environmental Energy, Co., Ltd., Japan

Predicting Slag Viscosity from Coal Ash Composition

J.D. Laumb, Energy & Environmental Research Center, University of North Dakota, U.S.A.
S.A. Benson, Energy & Environmental Research Center, and Microbeam Technologies Inc., U.S.A.
M.D. Mann and J. Erjavec, University of South Dakota, U.S.A.

TRACK 4 - TOPIC B
Liquefaction Products

Mechanochemical Preparation of Nanostructured Tetragonal Zirconia Catalysts for the Sceletal Isomerization of Low-Grade NAFTA from Coal

P.N. Kuznetsov, L.I. Kuznetsova, S.M. Kolesnikova, and G.A. Moiseeva
Institute of Chemistry & Chemical Technology, Russia

Steam-Gasification of Coal Liquefaction Residue: Role of Pyrrhotite and Sodium Chloride

Z. Liu, H. Cui, J. Yang, and J. Bi
Chinese Academy of Sciences, P.R. China

Utilization of the Coal Liquefaction Residue from the NEDOL Coal Liquefaction Process (I) - Characterization of Coal Liquefaction Residue

K. Inokuchi, Mitsui SRC Development Co., Ltd., Japan
M. Mochizuki, Nippon Steel Corporation, Japan
S. Wasaka and S. Ibaragi, New Energy and Industrial Technology Development Organization, Japan
T. Zhurning, Shenhua Group Corporation, Ltd., Japan
K. Sakawaki, Mitsui SRC Development Co., Ltd., Japan

Parallel Sessions 4:00 p.m. - 5:40 p.m.

TRACK 5 - TOPIC E
Trace Elements and HAPS I

Photochemical Removal of Mercury From Flue Gas

E.J. Granite* and *H.W. Pennline
U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.

The Partitioning of Trace Elements in a Pilot Scale Co-Gasification Plant

G.P. Reed, D.R. Dugwell, and R. Kandiyoti
Imperial College (University of London), United Kingdom

Application of Coals as Sorbents for the Removal of Cr From Aqueous Waste Streams

J. Lakatos
University of Miskolc, Hungary
S.D. Brown
University of Huddersfield, United Kingdom
C.E. Snape and M. Cloke
University of Nottingham, United Kingdom

Measurement and Prediction of Mercury Speciation from the Co-Combustion of Renewables and Coal Within a Pulverised Fuel Fired Combustor

K.D. Clark, P.G. Costen, D. Dajnak, and F.C. Lockwood
Imperial College of Science, Technology & Medicine

Application of Microwave Induced Plasma-Mass Spectrometer (MIP-MS) for Routine Analysis of Trace Elements in Coals

A. Sharma
Tohoku University, Japan

TRACK 6 - TOPIC E
Particulate Emission and Control I

The Steubenville Comprehensive Air Monitoring Program (SCAMP): Initial Ambient Air Results

J.A. Withum, S.E. Winter, and V.B. Conrad, *CONSOL Energy, Research & Development, U.S.A.*
P. Koutrakis and H. Suh
Harvard University, School of Public Health
*** R.M. Statnick***
CONSOL Energy, Research & Development, U.S.A.

Quantitative Analysis of Ambient Air 2.5µm Particles Using Scanning Electron Microscopy

R.R. Anderson, P.C. Rohar, C.M. White, and D.V. Martello
U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.

Investigation of Thermal Extraction Conditions for HyperCoal (Ashless Coal) Production

T. Yoshida, T. Takanohashi, K. Sakanishi, and I. Saito
National Institute of Advanced Industrial Science and Technology, Japan
M. Fujita and K. Mashimo, *Nihon University, Japan*

High Temperature Gas Stream Cleanup Test Facility and R&D Program

E.M. Saab, *U.S. Department of Energy, National Energy Technology Laboratory, U.S.A*
*** T.K. Chiang,*** *U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.*

5:40 p.m. **Adjourn**

Powell Street Hill

Union Square

Photos by Phil Coblentz, courtesy of SFCVB

**** Denotes presenter only, non-author***

Agenda

TUESDAY, OCTOBER 2, 2001

General Session 8:30 a.m. - 9:15 a.m.

8:30 a.m. - 9:15 a.m. **Plenary Speaker**: John Larson, Professor of Chemistry, Lehigh University

Poster Session 9:15 a.m. - 10:20 a.m.

PAH Removal from Hot Gas Cleaning

A.M. Mastral, T. Garcia, M.S. Callen, M.V. Navarro, and J.M. Lopez, Instituto de Carboquímica, CSIC, Spain

Brown and Salty Coal Investigation by EPR Saturation

I.V. Kozlova, T.G. Shendrik, and I.E. Nosyrev
L.M. Litvinenko Institute of Physical, Organic & Coal Chemistry of National Academy of Sciences of Ukraine, Ukraine

Study on the Heat Output of Coal Oxidation at Relatively Low Temperature

J. Deng, H. Wen, and J. Xu, Xi'an University of Science & Technology, P.R. China

Structural-Chemical Transformations at Catalytic Coal Pyrolysis

L.V. Pashchenko amd T.G. Shendrik,
L.M. Litvinenko Institute of Physical, Organic & Coal Chemistry of National Academy of Sciences, Ukraine
M.Y. Ugay and B.N. Kuznetzov, Institute of Chemistry and Chemical Technology of SB RAS, Russia

Hydrodesulfurization Activity of Binary Metal Sulfides Prepared by Mechanical Milling

Y. Kuriki, K. Uchida, K. Shimada, S. Ohshima, H. Ago, M. Yumura, and F. Ikazaki, National Institute of Materials & Chemical Research, Japan

Prediction of Coal Properties Using Infrared Spectroscopy

J.M. Andrés, A.C. Ferrando, and P. Ferrer, Instituto de Carboquimica, CSIC, Spain

Studying of Possibilities of Sorbents Obtaining from Carbonaceous Clays of Dnyeprovsky Brown Coal Basin

V.A. Tamko, V.I. Saranchuk, and I.I. Shvets, L.M. Litvinenko Institute of Physical-Organic Chemistry and Coal Chemistry of National Academy of Sciences of Ukraine, Ukraine

Chemistry of Co-Processing of Crude Oil Vacuum Residue and Plastics

R. Köpsel, V. Simanjenkov, and T. Kuchling, Freiberg University of Mining and Technology, Germany

Composition and Characteristics of Heavy Toluene Soluble Products from Coprocessing of Yanzhou Coal and Gudao Petroleum Resid

R. Yan, Taiyuan University of Technology, P.R. China
Z. Liu, and J. Yang, Chinese Academy of Sciences, P.R. China

Modeling of Coal Thermolysis and Liquefaction

I.V. Kalechits and V.Y. Korobkov, Russian Academy of Sciences, Russia

The Luebtheen Lignite Deposit in NE Germany – A Diatom Rich Raw Material or Waste Only?

J. Rascher, GEOmontan Entp, Germany
N. Volkmann, Freiberg University of Mining and Technology, Germany

Sulfur Forms in Two Cretaceous Coals with Distinctive Physico-Chemical Characteristics

M. Stefanova, Bulgarian Academy of Sciences, Bulgaria
J. Yperman and R. Carleer, LUC, Universiteitslaan, Belgium
F. Laggoun-Défarge, ISTO UMR 6113 CNRS-Universite d'Orleans, France
M.J. Iglesias, University of Almeria, Spain
I. Suarez-Ruiz, Instituto Nacional del Carbon / CSIC, Spain

Petrology and Chemistry of Vitrinite-Rich Coals from the Lower Cretaceous Mannville Formation, Alberta, Canada: Inference to Palaeoenvironmental Conditions

F. Laggoun-Défarge, ISTO UMR 6113 CNRS-Universite d'Orleans, France
T. Gentzis, National Centre for Upgrading Technology, Canada
F. Goodarzi , Geological Survey of Canada, Canada
M.J. Iglesias, University of Almeria, Spain
I. Suarez-Ruiz, Instituto Nacional del Carbon (CSIC), Spain

Removal of Trace Elements in Coal by Chemical Cleaning

K. Matsuoka, A. Abe, Y. Suzuki, and A. Tomita
Tohoku University, Japan

Investigation of the Influence of Caking Petroleum Additive on Structural Formation in the Compact Residues of Coal Having a Different Rank

V. Zubkova, Jan Kochanowski University, Poland

Investigation of the Influence of Mass Transfer on the Formation of Coke Structure During Coking

V. Zubkova, Jan Kochanowski University, Poland
N. Preobrazhenskaya and E. Soldatenko,
The Ukrainian State Research Institute for Carbochemistry, Ukraine

Coal Conversion by Wood-Decaying Fungi

Y. Kabea and N. Takahashi, Tamagawa University, Japan
A. Ishihara, M. Iso, and T. Kabe
Tokyo University of Agriculture and Technology, Japan

Trace Elements in Major Sulphur-Bearing Minerals in Bulgarian Coals

I.J. Kostova, Sofia University, Bulgaria

Poster Session 9:15 a.m. - 10:20 a.m.

Supermolecular Structure of Tending to Self-Ignition Coals

L.V. Pashchenko and V.I. Saranchuk
L.M. Litvinenko Institute of Physical, Organic & Coal Chemistry of National Academy of Sciences, Ukraine

Formation of NH_3 and HCN During the Pyrolysis of Chinese and Australian Coals

L. Meirong, Y. Xianfeng, L. Wenying, F. Jie, Z. Wei, and X. Kechang
Shanxi Key Lab of Coal Science and Technology, P.R. China

Erroneous Coal Maturity Assessment Caused by Low Temperature Oxidation

J.R. Disnar, Y. Copard, and F. Laggoun-Défarge
ISTO UMR 6113 CNRS-Universite d'Orleans, France
F.J.-F. Becq-Giraudon, *BRGM DR/LGM, France*

Characteristic of Tar Fractions Activated Pyrolysis of the Brown Coal By i.r. - and h n.m.r. Spectroscopy

V.N. Shevkoplyas, *National Academy of Sciences of Ukraine, Ukraine*

Molecular Mass Distribution of Humic Acids and Products of Chemical and Biological Depolymerization of Lignite

H. Schmiers, S. Grosse, A. Weber, and R. Köpsel
Technische Universität Freiberg, Germany

Hydrogenation of Anthracene in Hydriodic Acid Media Using Microwaves

J.M. Andrés, P. Ferrer, and A.C. Ferrando
Instituto de Carboquimica, CSIC, Spain

Effect of Pyrolysis Conditions on Desulfurization of Coal

L. Xu, J. Yang, Y. Li, and Z. Liu
Chinese Academy of Sciences, P.R. China

Evaluation of Some Oil Shales and Research of Their Pyrolysis Characteristics

Y. Zhe, *University of Petroleum, P.R. China*

The Estimation Method for Reliable Factors in Linear Models for Complex of Physical and Chemical Coal Characteristics

F.N. Grigoriev and E.N. Grigorieva
Russian Academy of Sciences, Russia

Mineral Matter Transformations of Low Grade Coals at Chemical Modification and Pyrolysis

T.G. Shendrik, V.N. Shevkoplyas, and I.E. Nosyrev
L.M. Litvinenko Institute of Physical Organic and Coal Chemistry National Academy of Sciences, Ukraine

Estimation of the Hard Coals Sorption Capacity at Different Temperature and Pressure

A. Nodzenski and S. Holda, *Faculty of Fuels & Energy, University of Mining & Metallurgy, Poland*

Elucidation of Hydrogen Mobility in Coal Under Reductive Atmosphere Using a Tritium Tracer Method

A. Ishihara, D. Nishigori, Y. Ohashi, K. Sano, S.Kim, W. Qian, and T. Kabe, *Tokyo University, Japan*

Effects of Pyrolysis Conditions and Air-Oxidation of Coals on Characteristics of Chars

H. Aso, T. Morimoto and H. Oda, *Kansai University, Japan*

Trace Elements in Selected Turkish Lignites

S. Özdoðan and N. Öztürk, *Marmara University, Turkey*

The Influence of CO_2 upon Co-Liquefaction of Subbituminous Coal and Waste Plastics

A.M. Osipov, A.F. Popov, Z.V. Boyko, T.G. Shendrik, and S.V. Grishchuk, *L.M. Litvinenko Institute of Physical-Organic & Coal Chemistry National Academy of Sciences of Ukraine, Ukraine*

Depolymerization of Lignite by Alkaline and Enzyme Catalyzed Hydrolysis

H. Schmiers, S. Große, A. Weber, B. Thomas, and R. Köpsel
Technische Universität Freiberg, Germany

Lowstand Cycles and Coal Formation – A New Aspect in Sequence Stratigraphy of Paralic Environment

G. Standke, *Saxonian State Agency for the Environment and Geology, Germany*
J. Rascher, *GEOmontan Entp. Freiberg, Germany*
N. Volkmann, *Freiberg University of Mining and Technology, Germany*

Effect of Operational Variables on the Dynamic Viscoelasticity of Coal During Heating

K. Norinaga, O. Fujii, and M. Iino, *Tohoku University, Japan*

The Pyrolysis Behaviour of Sulphur Model Compounds: A Mass Spectroscopic Study

S. Mullens, *Material Technology, VITO, Belgium*
J. Yperman, G. Reggers, and R. Carleer
Limburgs Universitair Centrum, Belgium
A.C. Buchanan III and P.F. Britt
Oak Ridge National Laboratory, U.S.A.

Mineral and Chemical Composition of the Pernik Coal and of Their Waste Products from Mining and Dressing Bulgaria

M. G. Yossifova, *Bulgaria*

Utilization of the Coal Liquefaction Residue from the NEDOL Coal Liquefaction Process (2)-Extraction and Hydrocracking of Asphaltene in Liquefaction Residue

S. Ibaraki, and S. Wasaka, *New Energy and Industrial Technology Development Organization, Japan*
K. Sakawaki and K. Inokuchi, *Mitsui SRC Development Co., Ltd., Japan*
M. Mochizuki, *Nippon Steel Corporation, Japan*
T. Zhuming, *Shenhua Group Corporation, Japan*

Agenda

TUESDAY, OCTOBER 2, 2001

Poster Session 9:15 a.m. - 10:20 a.m.

Preparation Possibilities and Utilization of Different Coal Tar Pitch Types

Gh. Cadar, Metallurgical Research Institute, România
V.D. Râng, D. Popescu, Steel Plant SIDEX, România

Preparation of Alcohols and Ketones from Syngas over Modified Fe-Cu Catalysts

Y. Su, Y. Liu, C. Ye, Y. Guo, and L. Li, Zhengzhou University, P.R. China

Inertinite Influence on Coal Plasticity and Carbonization

G. Predeanu and V. Slavescu,
Metallurgical Research Institute, România
C. Panaitescu, University "Politehnica" Bucure ti, România

The Study of Genetic and Technologic Factors of Auto Oxidation Processes in Coal Carbonization Products

I.A. Korobetskii, M.S. Ismagilov, and E.S. Shudrikov,
Clean Coal Technology & Certification Center (COAL-C, Ltd.), Russia

Particulate Matter Emissions from Coal AFBC

A.M. Mastral, M.S. Callen, R. Murillo, and T. Garcia,
Instituto de Carboquimica, CSIC, Spain

Flash Pyrolysis Brown Coals of the Different Deposits Using Thermogravimetry

V.N. Shevkoplyas, National Academy of Sciences of Ukraine, Ukraine

The Influence of Pyrolysis Conditions and Coal Type On the Reactivity of Formed Chars

A. Maczuga, W. Ferens, and W. Rybak
Wroclaw University of Techology, Poland

Chemical Activation of Spanish Coals for the Abatement of VOC at Low Concentrations

Avelina Garcia-Garcia, M.A. Lillo-Rodenas, J. Carratala-Abril, D. Cazorla-Amoros, and A. Linares Solano
University of Alicante, Spain

High Grade Paving Asphalt from Co-Processing of Coal and Petroleum Residue

Z.J. Wang, R.P. Yan, Y.M. Li, H.H. Zhang, J.L. Yang, and Z.Y. Liu
State Key Lab. of Coal Conversion, Institute of Coal Chemistry, Chinese Academy of Sciences, P.R. China

Parallel Sessions 10:20 a.m. - 12:00 p.m.

TRACK 1 - TOPIC A
Mineral Matter & Trace Elements

Principles of Methods for Determining Types of Trace Elements Compounds Coals

M.Ja. Shpirt, Fossil Fuel Institute, Russia

The World Coal Quality Inventory

R.B. Finkelman, U.S. Geological Survey, U.S.A.

The Main Types of Rare Earth Element Distribution in Coals

V.V. Seredin, Institute of Geology of Ore Deposits, Petrography, Mineralogy & Geochemistry (IGEM), Russia

Trace Elements and Biodesulfurization of Pyritic Inclusions

M. Seferino lu, Å. Sandström and J. Paul
Luleaa University of Technology, Sweden

Determination of Mode of Occurrence of Calcium in Coals

K. Matsuoka, E. Rosyadi, and A. Tomita
Tohoku University, Japan

TRACK 2 - TOPIC D
Surface Chemistry

Oxidation Phenomena and the Flotation Properties of Coal

P. Somasundaran and L. Zhang, Columbia University, U.S.A.
D.W. Fuerstenau, University of California, U.S.A.

Study on the Surface Modification of Different Coalification Coals by FTIR

H. Zhu, Z.S. Ou, D.Z. Wang, and H.L. Li
College of Chemical Engineering & Technology, CUMT

Electrochemical Studies of Freshly Fractured Coal and Mineral Pyrite

D. Tao, P.E. Richardson, and R.H. Yoon
Virginia Polytechnic Institute and State University, U.S.A.

Study on the Surface Modification on Coal-Pyrite

Z. Hong, W. Meiying, O. Zeshen, and L. Hulin
China University of Mining and Technology, P.R. China
W. Dianzuo
Beijing General Research Institute for Non-Ferrous Metals, P.R. China

Parallel Sessions 10:20 a.m. - 12:00 p.m.

TRACK 3 - TOPIC B
Combustion: Numerical and Experimental Simulation

Numerical Investigation of Coal/Biomass Co-Firing

C. Ghenai, B. Zheng, C.X. Lin, and M.A. Ebadian
Florida International University, U.S.A.

The Modelling of NO Formation in the Combustion of Coal Blends

A. Arenillas, J.J. Pis, and F. Rubiera
Instituto Nacional del Carbon, Spain
R.I. Backreedy, J.M. Jones, M. Pourkashanian, and A. Williams
The University of Leeds, United Kingdom

The Lagging Behavior in the Unsteady Heating up Process of Coal Particles During Initial Pulverized Coal Combustion

Z. Gao and W. Yan, North China Electric Power University, P.R. China

New Laboratory Methods for the Practical Assessment of the Burning Characteristics of Coal in Large Furnaces

M. Berg, P. B. Nielson, and L. Vagtholm, ENERGI, Germany
J. Zelkowski, Technische Universitat Clausthal, Deutschland

Track 4 - TOPIC B
Liquefaction & Hydropyrolysis II

Fundamental Studies on Rapid Pyrolysis of Taiheiyo Coal

A. Zhang, M. Kaiho, O. Yamada, H. Yasuda, M. Zabat, and K. Nakano, National Institute of Advanced Industrial Science and Technology, Japan

Catalytic Multi-stage Hydropyrolysis of Coal with Catalyst Prepared with Ultrasound

N. Wang, W. Li, and B. Li, Chinese Academy of Sciences, P.R. China

Comparison of the Pyrolysis of the Carbonaceous in Arc Plasma

T.Y. Jun, L.Y. Kang, L. Fan, X.K. Chang, and F.Y. San
Taiyuan University of Technology, P.R. China

Pyrolysis of Coal in Thermal Hydrogen Plasma

Y.K. Lu, X.Y. Pang, S.Y. Zhu, and K.C. Xie
Taiyuan University of Technology, P.R. China

Track 5 - TOPIC C
Carbons

Formation of Porous Structure of Semicokes from Pyrolysis of Turkish Coals in Different Atmosphere

M.F. Yardim, E. Ekinci, and E. Apak
Istanbul Technical University, Turkey
V. Minkova, M. Razvigorova, T. Budinova, and N. Petrov
Bulgarian Academy of Sciences, Bulgaria

Carbon Molecular Sieves from Semi-Anthracite and Anthracite

A. Albiniak, A. Jankowska, J. Kaczmarczyk, M. Jasieko-Halat, E. Broniek, and T. Siemieniewska
Wroclaw University of Technology, Poland
J.A. Pajares, and R. Manso
Instituto Nacional del Carbón (CSIC), Spain
J.M. Guil, Instituto de Quimica Fisica Rocasolano (CSIC), Spain

Effect of Addition of Chlorides on the Carbonization of Coal

E. Lejnarová and M. Kaloc
Technical University of Ostrava, Czech Republic

The Role of Anthracite as Feedstock for High Value Carbon Products

H.H. Schobert, J.M. Andrésen, P.J. Pappano, C.E. Burgess, and J. Zengel
The Energy Institute, The Pennsylvania State University, U.S.A.

Combustion of Coal Blends in a Novel 'Suspension-Firing' Reactor

N. Paterson, D. Peralta, D.R. Dugwell, and R. Kandiyoti
Imperial College (University of London), United Kingdom

Track 6 - TOPIC E
Particulate Emission and Control II

The Effects of High Carbon-in-Ash on Electrostatic Precipitator Performance

M. Cloke, E. Lester, S. Hanson, and A. Thompson
University of Nottingham, United Kingdom

Flow Distribution Model In Large Scale Hot Gas Filters

J.G. VanOsdol, J. Halow, and T.K. Chiang
U.S. Department of Energy,
National Energy Technology Laboratory, U.S.A.

Development of Membrane-Based Electrostatic Precipitator

H. Pasic, M.K. Alam, and D.J. Bayless
Ohio University, U.S.A.

Agenda

12:00 p.m. - 1:30 p.m. **Lunch**

Luncheon Speaker: Carolyn Wente, Wente Winery

Parallel Sessions 1:30 p.m. - 3:40 p.m.

TRACK 1 - TOPIC A
Physical Structure & Properties II

XRD Analysis of Swollen Coal-The Implication of Influence of Natural Organic Fluid on the Evolution of Coal Structure

Y. Jia and F. Zeng, *Taiyuan University of Technology, P.R. China*

Mechanical Properties of Coal Surfaces Studied by Atomic Force Microscope

O. Yamada, M. Zabat, H. Yasuda, A. Zhang, K. Nakano, and M. Kaiho
National Institute of Advanced Industrial Science and Technology, Japan

The Studies of Structure of Shenfu Coal and Its Depolymerization Reactivity Using FTIR

J. Ren, J. Feng, Y. Zhang, and K. Xie
Taiyuan University of Technology, P.R. China

A Quick and Easy Technique for the Measurement of Acidic Oxygen Functional Groups in Brown Coal

W.R. Jackson, *Monash University, Australia*
L.M. Clemow and A.L. Chaffee
CRC for Clean Power from Lignite and Monash University, Australia
R. Sakurovs, *CSIRO Division of Energy Technology, Australia*
D.J. Allardice, *Allardice Consulting, Australia*

TRACK 2 - TOPIC D
Flotation

Interlaboratory Test Program on the Floatability Potential of Fine Coal

R.P. Killmeyer
U.S. Department of Energy,
National Energy Technology Laboratory, U.S.A.
M.V. Ciocco, and P.H. Zandhuis
Parsons Project Service, Inc., U.S.A.

Removal of Mineral Matter from Fine Coal

T. Hirajima, K. Yukawa, and M. Tsunekawa
Hokkaido University, Japan

Fine Coal Cleaning At Massey Energy

P.J. Bethell
Massey Energy, U.S.A.

Houses on Alamo Square Park

A San Francisco Cable Car

Photos by Phil Coblentz, courtesy of SFCVB

Parallel Sessions 1:30 p.m. - 3:40 p.m.

TRACK 3 - TOPIC B
Ignition and Carbon Burnout

Study on Ignition Mechanism of Coal Briquettes

L. Chen and Y. Zhao
Jiaozuo Institute of Technology, P.R. China

Kinetic Evaluation Of The Colombian Coal Reactivity During Combustion

M. Giraldo and F. Chejne
Pontificia Bolivariana University, Colombia

The Combustion Burnout Performance of Some South American Coals in a Drop Tube Furnace

R. Barranco, M. Cloke, and E. Lester
University of Nottingham, United Kingdom

Determination of Kinetic Data of Coal and Coke Combustion Based on the Ignition Behavior Under Static and Continuous Flow Conditions

C. Herbig and A. Jess
University of Technology Aachen Worringer Weg 1, Germany

TRACK 4 - TOPIC B
Gasification Processing

Study of Co-Gasification of Mixtures of Coal and Biomass Wastes

F. Pinto, R.N. André, C. Franco, C. Tavares, M. Goodman, I. Gulyurtlu, and I. Cabrita
INETI-DTC, Portugal

New Results from Studying Gasification Processes by In-Situ GOP

E. Schotte and H. Rau
Otto-von-Guericke University, Germany
H. Lorenz, Max-Planck-Institute for Dynamics of Complex Technical Systems, Germany

Integrated Process of Syn-Gas Producing by Lignite Oxidative Pyrolysis and Water-Steam Gasification of Carbonized Product

B.N. Kuznetsov, M.L. Shchipko, and A.V. Rudkovsky
S.B. Russian Academy of Sciences, Russia

Investigation of Ammonia Formation During Gasification in an Air Blown Spouted Bed and the Identification of Ways of Minimising Its Formation

N. Paterson, Y. Zhuo, B. Avid, D.R. Dugwell, and R. Kandiyoti
Imperial College (University of London), United Kingdom

Development and Testing of Regenerable Iron-Calcium Oxides Desulfurization Sorbents in a Fixed-Bed Reactor

Y. Li, C. Li, K. Xie, J. Shangguan, H. Fan, S. Liang, and F. Shen
Taiyuan University of Technology, P.R. China

TRACK 5 - TOPIC E
Trace Elements and HAPS II

Activated Carbons Prepared from Coals for the Uptake of Organic Compounds from Aqueous Solution

A. García-García, A. Gregório, D. Boavida, and I. Gulyurtlu
INETI, Portugal

PAH Emissions from Coal AFBC

A.M. Mastral, M.S. Callen, and T. Garcia
Instituto de Carboquímica, CSIC, Spain

Methods of the Quantitative Assessment of Potentially Hazardous Trace Elements Emissions Into the Atmosphere After Coals Combustion

M.Ja. Shpirt
Fossil Fuel Institute, Russia

The Re-Evolution of Mercury from Coal Combustion Materials and By-Products

M.S. DeVito
CONSOL Energy, Research & Development, U.S.A.
** R.M. Statnick*
CONSOL Energy, Research & Development, U.S.A.

TRACK 6 - TOPIC E
Greenhouse Gases & Sequestration II

CO_2 Sequestration in Brinefields: Is Buoyancy a Problem?

G.S. Bromhal, M. Ferer, and D.H. Smith
U.S. Department of Energy,
National Energy Technology Laboratory, U.S.A.

Coal Resource Management for Canadian Coalfields, Computer Modeling, GIS and the Internet

J.D. Hughes
Geological Survey of Canada, Canada

Network Modeling of CO_2 Sequestration in Brinefields: Displacement Efficiencies and Fundamental Limitations on CO_2 Storage Volumes

G.S. Bromhal, M. Ferer, and D.H. Smith
U.S. Department of Energy,
National Energy Technology Laboratory, U.S.A.

Thermodynamics of the Sequestration of Carbon Dioxide in Natural Gas Hydrates in Porous Media

D.H. Smith and J.W. Wilder
U.S. Department of Energy,
National Energy Technology Laboratory, U.S.A.
K. Seshadri, Parsons Infrastructure and Technology Group, U.S.A.

3:40 p.m. - 4:00 p.m. Break

Sessions Resume 4:00 p.m. - 5:40 p.m.

TRACK 1 - TOPIC A
Coal Petrography II

Petrographic and Spectroscopic Investigations of Lignite Hydrogenation Residues

W. Böhlmann
University of Leipzig, Faculty of Physics & Geosciences, Germany
N. Volkmann
Technical University of Freiberg, Germany

Deconvolution of Petrographic Data from Blended Coals Using Bayes Theorem

E. Lester, D. Watts, M. Cloke, and P. Langston
Nottingham University, United Kingdom

Are There Nanocrystalline Occurrences of Inorganic Elements in Macerals?

F.E. Huggins and G.P. Huffman
University of Kentucky, U.S.A.

The Metamorphic Range of Coals and the Fractal Parameters of its Structure

A.V. Astakhov, A.A. Belyi, and D.L. Shirotchin
Moscow State Mining University, Russia

TRACK 2 - TOPIC A
Chemistry of S, N, Cl II

Maldi-Tof Mass Spectra of Pitch Fractions with Narrow Polydispersity for the Calibration of SEC

R. Kandiyoti, C.A. Islas, I. Suelves, and A.A. Herod
Imperial College (University of London), United Kingdom

Evaluation of Catalytic Effects of Ferric Sulfide Catalyst and Nickel Sulfide on Coliquefaction of Coal and Biomass

L. Bai, Y. Yan, Y. Wang, T. Li, and Z. Ren
East China University of Science & Technology, P.R. China

Palace of Fine Arts

Photo by Phil Coblentz, courtesy of SFCVB

Sessions Resume 4:00 p.m. - 5:40 p.m.

TRACK 3 - TOPIC B
Kinetics and Reaction Mechanisms I

Predicting Burnout Using Advanced Image Analysis Techniques

E. Lester, D. Watts, and M. Cloke
Nottingham University, United Kingdom

Semi-Global Intrinsic Kinetics for Coal Char Combustion

R.H. Hurt and J.M. Calo
Brown University, U.S.A.

Study of Coal Combustion Co-Injected with Natural Gas Under Simulated Blast Furnace Conditions

W.P. Hutny, L. Giroux, J.T. Price, and J.A. MacPhee
CANMET Energy Technology Center, Canada

In Situ Study of Soot Formation by Small Angle X-ray Scattering

R.E. Winans, S. Seifert, T.H. Fletcher, and J.P. Hessler
Argonne National Laboratory, U.S.A.

TRACK 4
Liquefaction & Hydropyrolysis III

Hydrogenation / Hydrogenolysis of Bituminous Coals with Homogeneous Borane Catalysts

M.W. Haenel, J. Narangerel, U.B. Richter, and A. Rufińska
Max-Planck-Institut fur Kohlenforschung, Germany

A Study on Ferrous Sulfate Based Catalyst for Direct Coal Liquefaction

J. Yang, Y. Li, J. Zhu, L. Zhang, W. Linhu, Z. Liu, and B. Li
Chinese Academy of Sciences, P.R. China

Effect of Catalysts on the Co-Liquefaction of Coal with Polyethylene

N. Ikenaga, T. Kanno, and T. Suzuki
Kansai University, Japan

Liquefaction of Several Promising Chinese Coals Using Impregnated Iron Catalysts

J. Zhu, J. Yang, L. Zhang, Z. Liu, and B. Zhong
Chinese Academy of Sciences, P.R. China

TRACK 5 - TOPIC E
NO_X Emissions and Controls II

Kinetics of the Selective Catalytic Reduction (SCR) of Nitrogen Oxide over Indium Supported on Controlled Pore Glass (In-CPG-SMMC)

M. Serban, I. Fishtik, and R. Datta
Worcester Polytechnic Institute, U.S.A.

Nitrogen Oxides Formation During Pressurized Char Combustion

J. Tomeczek and S. Gil
Silesian Technical University, Poland

Simulating NO_X Formation in Coal-Fired Utility Furnaces with Elementary Reaction

S. Niksa
Niksa Energy Associates Mechanisms, U.S.A.

Effect of Mineral Matter on NO Emission During Char Combustion

Z. Zhao, W. Li, and B. Li
Chinese Academy of Sciences, P.R. China

TRACK 6 - TOPIC C
Carbon Products

Coal-Tar Pitch as Precursor for New Carbon Materials

G. Collin
DECHEMA e.V., Germany

Coals Structurally Modified by Acetylnitrate

J.V. Tamarkina, T.G. Shendrik, and V.A. Kucherenko
L.M. Litvinenko Institute of Physical Organic and Coal Chemistry National Academy of Sciences, Ukraine
A. Krzton
Polish Academy of Sciences, Poland

Study of Ultrafine Coal Powder Material Preparation and Application

Z. Anning, Q. Jianling, L. Qianling, Y. Fusheng, and G. Lingmei
Xi'an University of Science and Technology, P. R. China

5:40 p.m. **Adjourn**

Agenda

Wednesday, October 3, 2001

General Session 8:30 a.m. - 9:15 a.m.

8:30 a.m. - 9:15 a.m. **Plenary Speaker**: Steve Gehl, Director, Strategic Technology, EPRI

Poster Session 9:15 a.m. - 10:20 a.m.

Geochemical Study of the Lead and Cadmium Distribution in Two Colombian Thermic Coals

L.E. Rincón, L.E. Henao, and C.J. Cedeño, *Departmento de Quimica. U.NAL, Colombia*

Predictive Observations Concerning the Combustion Behavior of Coals for Thermal Generation of Electricity

S. Helle, U. Kelm, G. Alfaro, and V. Sanhueza
Instituto de Geologia Economica Aplicada (GEA), Universidad de Concepcion, Chile
A. Gordon, F. Gordon, X. Garcia, and J. Faundez
Universidad de Concepcion, Chile

Chemical Demineralisation and Its Influences on Properties of Coal

Y. Song, D. Zhang, X. Lu, J. Gao, and Y. Yan
East China University of Science & Technology, P.R. China

Impact of the Waters from the Coal Dressing Upon Environment in the Region of Central Preparation Plant "Pernik' Bulgaria

M.G. Yossifova

NO Reduction Tests on Activated Coal Chars Loaded with Petroleum Coke Ash

R. Moliner, M.E. Gálvez, and M.J. Lázaro
Instituto de Carboquimica CSIC, Spain

Study of the Composition of Products on the Main Stages of Carbonisation of Medium-Softening-Point Pitches

A.G. Anshits, N.N. Anshits, L.I. Kurteeva, S.I. Tsyganova, and A.R. Suzdorf, *Institute of Chemistry and Chemical Technology of the Siberian Branch RAS, Russia*
V.P. Plekhanov, *Krasnoyarsk State Technical University, Russia*
S.V. Morozov, *Novosibirsk Institute of Organic Chemistry of the Siberian Branch RAS, Russia*

The Study on the Influence of Surface Properties on the Briquettability of the Coal

Y.L. Zhao, D.G. Ji, Y.Z. Liu, H.Y. Chang, and J.F. Wu
Taiyuan University of Technology, P.R. China

Data Warehouse Design and Realization Based on Coal-Mining ERP Systems

H. Zhong and Y. Liang
China University of Mining & Technology, P.R. China

Effect of Rank on the Sorption of Carbon Dioxide on Argonne Premium Coals at High Pressures

E. Ozdemir, *University of Pittsburgh and U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.*
B.I. Morsi, *University of Pittsburgh, U.S.A.*
K. Schroeder, *U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.*

Behavior of Some Trace Elements of Brown Coal in the Process of the Pyrolysis

L.N. Lebedeva, L.A. Kost, V.V. Bykovsky, and E.G. Gorlov
Fossil Fuels Institute, Russia

The Effect of Brown Coal Quality Variations on Combustion and Environmental Emissions

W. Rybak, W. Ferens, and M. Rozen
Wroclaw University of Technology, Poland

The Interference of Volatile Hydrocarbons with SO_2 Measurements

M. Cloke and S. Hanson, *University of Nottingham, United Kingdom*
P. Simmons, *TXU Europe Power, Ipswich*

The Nature of Carbonaceous Material in High Carbon-in-Ash Particles in the Ash from Pulverized Coal Combustion

Z. Aquino, M. Cloke, S. Hanson, E. Lester, and K. Steel
University of Nottingham, United Kingdom

Method of Deep Purification of Coal and Coal Waste from Ash and Sulfur

A.Y. Laptienko, V.V. Rekun, N.V. Taryanik, V.I. Saranchuk, and T.G. Shendrik, *L.M. Litvinenko Institute of Physical-Organic Chemistry and Coal Chemistry of National Academy of Sciences of Ukraine, Ukraine*

Particulate Control Using Recrystallized Silicon Carbide Filter Elements

P. Eggerstedt and J.F. Zievers
Industrial Filter & Pump Manufacturing Company, U.S.A.

Hydrogasification of Coal and Polyethylene Mixture

H. Yasuda, O. Yamada, A. Zhang, K. Nakano, and M. Kaiho
National Institute of Advanced Industrial Science and Technology, Japan

Preparation, Characterization and Desulfurization Behavior of Calcium Sorbents Prepared With Fly Ash

J. Fernández and M.J. Renedo, *University of Cantabria, Spain*

Poster Session 9:15 a.m. - 10:20 a.m.

Determination of the Carcinogenic PAH Yields in Products of Carbonization of Medium- and High-Softening-Point Pitches and Anode Pastes Based on Them

A.G. Anshits, N.N. Anshits, L.I. Kurteeva, S.I. Tsyganova, and A.R. Suzdorf, Institute of Chemistry and Chemical Technology of the SB RAS, Russia
S.V. Morozov, Institute of Organic Chemistry of SB RAS, Russia

Usage of Microwave Technique to Reduce Greenhouse Gas Emission

I.A. Korobetskii and S.A. Nazimov, Clean Coal Technology & Certification Center (COAL-C, Ltd.), Russia

The Relationship Between Initial Fuel Devolatilisation Behaviour and Emission Behaviour During the Co-Combustion of Coal and Biomass in a Fixed Bed

A. Ross, J.M. Jones, and A. Williams
University of Leeds, United Kingdom
K. Kubica, Institute of Chemical Processing of Coal, Poland
J.T. Andersson, University of Munster, Germany

Coal Co-Combustion With High Calorific Waste Materials

A.M. Mastral, M.S. Callen, and T. Garcia
Instituto de Carboquímica, CSIC, Spain

Preparation and Characterization of Petroleum Coke Ash Catalysts for SCR of NO

R. Moliner, Instituto de Carboquimica CSIC, Spain

Explosions in Confined Spaces Containing Bituminous Coals - The Possible Role of Molecular Hydrogen

H. Cohen, Ben-Gurion University of the Negev, NRCN

Sources of Trace Elements in the Recent Sediments of Pigeon Lake, Alberta; Assessment of the Impact from Coal-Fired Power Plants vs. other Anthropogenic and Natural Sources

H. Sanei, University of Victoria, Canada
F. Goodarzi, Geological Survey of Canada, Canada

Concentration of Metals and Polynuclear Aromatics in Drinking Water in the Vicinity of Lake Wabamun, Alberta, Canada

F. Goodarzi, Geological Survey of Canada, Canada
T. Gentzis, National Center for Upgrading Technology, Canada

Concentration and Distribution of Elements in Milled-Coal, Power Plant Ashes, and Stack Emitted Materials in a Canadian Coal-Fired Power Plant

F. Goodarzi, Geological Survey of Canada, Canada
T. Gentzis, National Center for Upgrading Technology, Canada

Reasons for Higher Fly Ash Carbon Content in CFB Boilers and Measures of Improving

S. Li, D. C. Liu, and S. H. Zhang
HuaZhong University of Science & Technology, P.R. China

Study of the Catalyst for Preparing Fluorenone by Gas-Phase Catalytic Oxidation

X. Zhao, H. Zhao, and R. Xiao
Anshan Institute of Iron & Steel Technology, P.R. China

Assessing the Variation of Coal Structure During the Nitric Acid Coal Cleaning by FTIR

R. Alvarez, C. Clemente, and D. Gómez-Limón
Universidad Politécnica de Madrid, Spain

The Role of Ca-Based Additions in Reducing Precipitator Fly Ash Load

N.V. Russell, The University of Sheffield, United Kingdom
A.R. Cleave, F. Wigley, and J. Williamson
Imperial College, United Kingdom

The Influence of Coal Composition, Temperature and Particle Size on the Formation of NO During Pulverized Coal Combustion

W. Rybak, A. Maczuga, and W. Ferens
Wroclaw University of Technology, Poland

Curing and Combustion of Coal and Biomass Smokeless Fuel Briquettes

M.J. Blesa, J.L. Miranda, R. Moliner, J.M. Palacios
Instituto de Carboquimica, CSIC, Spain

Production of Env-ly Safe Solid Fuel from Low Rank Coals

A.P. Fomin and O.G. Rotapenko, Fossil Fuels Institute, Russia

Coal Resource Management for Southern Saskatchewan Coalfields, Canada Computer Modeling, GIS and the Internet

J.D. Hughes, W.J. McDougall, and C.M. Jessop
Geological Survey of Canada-Calgary, Canada

Thermal Infrared Imaging of Candle Filters During Preheating and Backpulsing

S.K. Beer, T.K. Chiang, G.F. McDaniel, E.M. Saab, and K.H. Warnick, U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.

A Study on Removal of HCl and Alkali Metal Vapor in High-temperature Coal Gas

J.S. Gao, Y.L. Li, B.L. Dou, and X.Z. Sha
Department of Energy Resources, ECUST, P.R. China

An Explore of Direct Conversion of CH_4 and CO_2 to Oxygenates by Two-Step Reaction Sequence

W. Huang, Y. Wu, Z. Gao, L. Yin, and K. Xie
Taiyuan University of Technology, P.R. China

Effect of H_2O and CO_2 on the Reaction Between Zinc Oxide and Hydrogen Sulfide

F. Huiling, L. Chunhu, X. Kechang, G. Hongsheng, and G. Hanxian
Taiyuan University of Technology, P.R. China

Reduction of Mercury Emissions - A New Approach

N.N. Goodarzi, University of Calgary, Canada
F. Goodarzi, Geological Survey of Canada, Canada
T. Gentzis, National Center for Upgrading Technology, Canada

Agenda

Poster Session 9:15 a.m. - 10:20 a.m.

Effect of Pyrite Removal on the Sulfur Characterization by AP-TPR

P. Rutkowski and G. Gryglewicz
Institute of Chemistry and Technology of Petroleum and Coal, Wroclaw University of Technology, Poland
S. Mullens and J. Yperman, *Limburgs Universitair Centrum, Belgium*

Study of the Desulfurisation of Polish Coal by Two Selective Oxidative Treatments

M. Kozlowski, R. Pietrzak, and H. Wachowska
Adam Mickiewicz University, Poland
S. Mullens and J. Yperman, *Laboratory of Applied Chemistry, IMO, LUC, Universiteitslaan, Belgium*

AP-TPR-TPO and XPS Sulfur Functionality Study of Low Rank Coals

S.P. Marinov, G. Tyuliev, and M. Stefanova
Bulgarian Academy of Sciences, Bulgaria
R. Carleer and J. Yperman, *Limburgs University, Belgium*

Determination of Sulfur Functionalities of Pyridine Extracts Obtained from Coals of Different Rank Using AP-TPR

P. Rutkowski and G. Gryglewicz,
Wroclaw University of Technology, Poland
S. Mullens and J. Yperman, *Limburgs University, Belgium*

Assessment of Char Structure by Different Microscopy Techniques in Relation to its Intrinsic Reactivity

M.J.G. Alonso, A.G. Borrego, D. Alvarez, and R. Menéndez
Instituto Nacional del Carbón, CSIC, Spain
J.-N. Rouzaud
Centre de Recherche sur la Matiere Divisee, CNRS, France

Origin of Unburned Carbon in Flyashes in Relation to Coal Blend Composition

K. S. Milenkova, A.G. Borrego, D. Alvarez, and R. Menéndez
Instituto Nacional del Carbón, CSIC, Spain
J. Xiberta, *Department Energia, ETSIMO, Spain*

Parallel Sessions 10:20 a.m. - 12:00 p.m.

TRACK 1 - TOPIC A
Chemical Composition and Constituents

Characterization of Water in Brown Coal

W.R. Jackson and M. Marshall, *Monash University, Australia*
G. Favas*, CRC for Clean Power from Lignite, Australia*
L.M. Clemow and A.L. Chaffee, *CRC for Clean Power from Lignite and Monash University, Australia*
R. Sakurovs, *CSIRO Division of Energy Technology, Australia*
D.J. Allardice, *Allardice Consulting, Australia*

Oxygen Speciation, Mineralogy and Thermal Behaviour of Selected Coals from Canada, the USA, the UK and Australia

J.-P. Charland, *CANMET Energy Technology Centre, Canada*
F. Goodarzi
Institute for Sedimentary and Petroleum Geology/GSC, Canada

Diagenetic Products of Iron Porphyrins Isolated from Texas Fairfield Lignite

F. Czechowski, *Wroclaw University of Technology, Poland*
R.P. Philp, *University of Oklahoma, U.S.A.*

Understanding Brown Coal-Water Interactions

W.R. Jackson and M. Marshall, *Monash University, Australia*
G. Favas*, CRC for Clean Power from Lignite, Australia*
L.M. Clemow and A.L. Chaffee, *CRC for Clean Power from Lignite and Monash University, Australia*
R. Sakurovs, *CSIRO Division of Energy Technology, Australia*
D.J. Allardice, *Allardice Consulting, Australia*

TRACK 2 - TOPIC A
Solvent Swelling

Effect of the Microporous Structure of Coals on their Swelling in the Organic Solvents

S.A. Aipshtein and O.I. Suprunenko
Institute of Fossil Fuels, Russia
Z.Weishauptová
Academy of Sciences of the Czech Republic, Czech Republic

Study of the Swelling Properties of Chinese Coal

Z. Anning and G. Lingmei
Xi'an University, P.R. China
G. Shucai
Dalian University of Technology, P.R. China

Penetration of Coals by Aromatic Hydrocarbons at Elevated Temperature

R. Sakurovs
CSIRO Energy Technology, Australia

Parallel Sessions 10:20 a.m. - 12:00 p.m.

TRACK 3 - TOPIC B
Kinetics and Reaction Mechanisms II

Oxy-Reactivity Studies of Partially Reacted Samples of a Pulverized Coal Char

P.A. Campbell and R.E. Mitchell
Stanford University, U.S.A.

Study on Combustion Reactivity of Chars from Pyrolysis of Shenmu Macerals

Q. Sun, W. Li, and B. Li
Chinese Academy of Sciences, P.R. China

Char Characterisation Using Bayes Theorem

E. Lester, D. Watts, and M. Cloke
Nottingham University, United Kingdom
W. Gibb
Power Technology Research Centre, United Kingdom

Laser-Raman Microscope Studies on Coal Characterization and Char Burnout

S. Kambara and K. Taniguchi, Idemitsu Kosan Co. Ltd., Japan
M. Harada, Center for Coal Utilization, Japan

TRACK 4 - TOPIC B
Pyrolysis I

Liquid Products from Pyrolysis of Turkish Coals in Different Atmosphere

E. Ekinci, F. Yardim, and E. Apak
Istanbul Technical University, Turkey
M. Razvigorova, V. Minkova, M. Goranova, N. Petrov, and T. Budinova
Bulgarian Academy of Sciences, Bulgaria

Retention of Catalytic Species in Chars during the Pyrolysis of Victorian Lignite

H. Wu, D. Mody, and C.Z. Li
CRC for Clean Power from Lignite, Australia

Characterization of Chars from Chinese Bituminous Coal Pyrolysis

L. Shengyu, H. Wei, R. Jun, and X. Kechang
Taiyuan University of Technology, P.R. China

TRACK 5 - TOPIC E
Trace Elements and HAPS III

Sorbent Injection for Heavy Metal Emission Reduction from the Co-Combustion of Sewage Sludge and Coal in a Pulverised Fuel Fired Combustor

K.D. Clark, P.G. Costen, D. Dajnak, and F.C. Lockwood
Imperial College of Science, United Kingdom

Trace Element Concentrations in Peatlands Near a Group of Coal-Fired Power Plants in Alberta, Canada

M.I. Hawke and R.M. Bustin
University of British Columbia, Canada
F. Goodarzi, Geological Survey of Canada, Canada

Heavy Metal Adsorption from Aqueous Solution by Coal and Char

K. Sugawara, Y. Enda, T. Kato, and T. Sugawara
Akita University, Japan
J.S. Dranoff, Northwestern University, U.S.A.
M. Shirai, Tohoku University, Japan

Use of Compound Specific Stable Isotope Measurements to Study the Formation and Environmental Source Apportionment of PAHs from Coal

C.E. Snape, C-G Sun, and S. Hanson
University of Nottingham, United Kingdom
C. McRae, Scottish Centre for Infection & Environmental Health, United Kingdom
A.E. Fallick
Scottish Universities Environmental Research Center (SUERC) United Kingdom

TRACK 6 - TOPIC E
Particulate Emission and Control III

On-Line Nondestructive Evaluation for Hot Gas Filters

P.C. Yue, U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.

Qualitative and Semi-quantitative Analysis of Semi-volatile Organics from Ambient Air Fine-Particulate Matter, PM2.5

R.R. Anderson, D.V. Martello, B.R. Strazisar, and C.M. White
U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.

Results of Laboratory Testing of a Novel, Rotational, Filter System for Use In High Temperature Environments

J.R. Shultz, T.K. Chiang, J. VanOsdol, and T. Floyd
U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.

Mineral Transformations and Interactions in Pulverized Coal Combustion

F. Wigley and J. Williamson
Imperial College,United Kingdom

12:00 p.m. - 1:30 p.m. **Lunch**

Parallel Sessions 1:30 p.m. - 3:40 p.m.

TRACK 1 - TOPIC A
Physical Structure & Properties III

Preserved Lignin Structures in Miocene-aged Lignite Lithotypes, Bulgaria

M. Stefanova, *Bulgarian Academy of Sciences, Bulgaria*
O. Maman, B. Guillet, and J.R. Disnar
University of Orleans, France
*** J. Yperman,*** *Limburgs University, Belgium*

Porosity Evolution In Coal Samples With Different Conversion

M. Giraldo and F. Chejne
Pontificia Bolivariana University, Colombia

Paramagnetic Centers in Thermally Decomposed Coal and Macerals

A.B. Wiêckowski and B. Pilawa, *Pedagogical University, Poland*

Groups of Paramagnetic Centers in Coals and Macerals

A.B. Wiêckowski and B. Pilawa, *Pedagogical University, Poland*

TRACK 2 - TOPIC D
Low Rank Coal Beneficiation I

Effects of Processing Conditions on the Nature of Product Water from a Novel Coal Drying Process

Y. Qi and A.L. Chaffee, *Monash University, Australia*

Biological Transformation of Low-Rank Coal (Brown) By Micromycetes

V.N. Shevkoplyas
National Academy of Sciences of Ukraine of L. Litvinenko Institute of Physical Organic Chemistry and Coal Chemistry, Ukraine

Accounting for CO_2 From LFC Products

E.P. Esztergar, *SGI International, U.S.A.*

High Quality Lignite Derived Fuels to Rival Bituminous Coals

G. Favas and W. Jackson, *CRC for Clean Power from Lignite and Monash University, Australia*

Exploring the Horizons of Brown Coal Drying Technologies for Power Generation Evaluation of Products from Various Processes

G. Favas, A.L. Chaffee, and W. Jackson, *CRC for Clean Power from Lignite and Monash University, Australia*

TRACK 3 - TOPIC B
Kinetics and Reaction Mechanisms III

Combustion Behavior of Char in High Temperature Air Combustion Condition

T. Suda, R. He, J. Sato, M. Takafuji, Y. Oda, and K. Kaneko
Ishikawajima-Harima Heavy Industries Co., Ltd., Japan

High Pressure Intrinsic Char Oxidation Kinetics of a Pittsburgh Char and a Lignite Char

P.M. Madsen, M.R. Sherman, J.W. Allen, R.J. Sawaya, T.H. Fletcher, and W.C. Hecker, *Brigham Young University, U.S.A.*

Development of Porosity During Coal Char Combustion and Gasification

E.M.Suuberg, I. Aarna, I. Külaots, M. Callejo, and R.H. Hurt
Brown University, U.S.A.

Effects of Fractal Pores on Char Burning in High-Temperature Air Combustion Conditions

R. He, T. Suda, and J. Sato
Ishikawajima-Harima Heavy Industries Co., Ltd., Japan

Effect of Maceral Composition and Char Reactivity Upon Unburned Carbon in Fly Ash from Blended Coals Combustion

A.L. Gordon, C. Ulloa, and X. Garcia
Departamento de Ingenieria Quimica, Chile
S. Helle, *Instituto GEA, Chile*

TRACK 4 - TOPIC B
Pyrolysis II

Thermal and X-Ray Diffraction Analysis of the Dehydrogenation Process During Coal

V. Strezov and J.A. Lucas, *The University of Newcastle, Australia*
L. Strezov, *BHP Research & Technology Development, Australia*
C.C. Wu, *The University of New South Wales*

Pyrolysis and Gasification of Victorian Brown Coal in Helium and CO_2 in a Wire-Mesh Reactor

Md. K. Jamil, C. Sathe, and C.Z. Li, *Monash University, Australia*
J. Hayashi, *Hokkaido University, Japan*
*** Hongwei Wu,*** *Monash University, Australia*

Effect of Solvent Extraction and Swelling on the Pyrolysis of Coals from the Caribbean Region of Colombia

M. Cloke, *University of Nottingham, United Kingdom*
R. Angulo, *Universidad del Atlantico, Colombia*

Study on the Pyrolsis Simulation of Four Chinese Coals

Z. Rongfang, H. Wei, Z. Suyu, X. Kechang, and Y. Lihua
Taiyuan University of Technology

Parallel Sessions 1:30 p.m. - 3:40 p.m.

TRACK 5 - TOPIC E
Trace Elements and HAPS IV

Molecular Dynamics Simulations on Effect of Sodium Chloride into Calcium Oxide on Desulfurization Characteristics

T. Murakami, N. Kurita, and I. Naruse
Toyohashi University of Technology, Japan

Kinetic Behaviour of Iron Oxide Sorbent in Hot Gas Desulfurization

Y.G. Pan, J.F. Perales, E. Velo, and L. Puigjaner
Universitat Politecnica de Catalunya, ETSEIB, Spain

Kinetic Modelling of the Dry FGD Process at Low Temperatures Using A Partially Reacted Sorbent

A. Garea, J.A. Marqués, and A. Irabien
University of Cantabria, Spain
H. Reissner, A. Kavouras, G. Krammer, and G. Staudinger
Technische Universitat Graz, Austria

FGD In-Duct Injection: Pilot Plant Data and Modelling of the Ca/S Influence

J.A. Marques, A. Garea, and A. Irabien
Universidad de Cantabria, Spain

Development of Dry Process for Simultaneous Flue Gas Desulfurization and Denitration Using Soil-Applicable Sorbents in Powder-Particle Fluidized Bed

T. Tashimo, T. Mori, and K. Kato, *Gunma University, Japan*
G. Luo, *Tsinghua University, P.R. China*

TRACK 6 - TOPIC E
Greenhouse Gases & Sequestration III

Canadian Coalbed Methane (CBM) Development Opportunities

K. Sinclair and G. Sloan
GTI E&P Services Canada Inc, Canada

Identification of Methane Dissolution in Coal

Z.Weishauptová and J. Medek
Academy of Sciences of the Czech Republic, Czech Republic

Computational Modeling of the Gas-Liquid Flow in Flow Cells: Application to Carbon Dioxide Sequestration in Brine Fields

D.H. Smith, C. Ji, and G. Ahmadi, *U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.*

A Fundamental Study of the Sequestration of CO_2 by Coal Seams and the Simultaneous Production of Methane Therefrom

K.L. Jones, *U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.*

The Removal of CO_2 From Flue Gases Using Magnesium Silicates, In Finland

J. Kohlmann and R. Zevenhoven
Helsinki University of Technology, Finland

3:40 p.m. - 4:00 p.m. **Break**

Plenary Session 4:00 p.m. - 5:30 p.m.

4:00 p.m. - 5:30 p.m. **Plenary Speakers**:
James Ekmann, Associate Director, Office of Systems and Policy Support, U.S. Department of Energy's National Energy Technology Laboratory,
Robert Finkelman, Coal Quality Coordinator, USGS

7:00 p.m. - 9:00 p.m. **Group Banquet**
Banquet Speaker: Rita Bajura, Director, U.S. Department of Energy's National Energy Technology Laboratory,
"The Role of Coal in a Carbon-Constrained World"

Parallel Sessions 8:30 a.m. - 10:00 a.m.

TRACK 1
No Papers Scheduled

Golden Gate Bridge

Photo by Phil Coblentz, courtesy of SFCVB

TRACK 2 - TOPIC D
Trace Element Removal

Enhanced Gravity Separators and Their Application Toward Fine Coal Cleaning

R.Q. Honaker
University of Kentucky, U.S.A.

HAPPs Reduction by Coal Preparation

G.H. Luttrell, J.N. Kohmuench, and R.H. Yoon
Virginia Polytechnic Institute & State University, U.S.A.

Specific and Non-Specific Interactions During Immobilization of Heavy Metals on Coals

B. Taraba, R. Maršálek, and M. Kaloč
Ostrava University, Czech Republic

Removal of Trace Hazardous Elements from Coal by Leaching and Preheating

A. Ohki, H. Yamashita, A. Iwashita, and T. Nakajima
Kagoshima University, Japan

TRACK 3 - TOPIC B
Pyrolysis III

Kinetic Analysis of Rapid Coal Pyrolysis in a Spot Heater Apparatus

X. Ma, H. Nagaishi, and T. Yoshida
National Institute of Advanced Industrial Science & Technology (AIST), Japan
M. Harada
Center for Coal Utilization, Japan

Extending the Chemical Percolation Devolatilization (CPD) Model from Coal to Lignin Pyrolysis

C. Sheng and J.L.T. Azevedo
Instituto Superior Técnico, Portugal

Rapid Coal Devolatilization at Elevated Pressures

S. Niksa
Niksa Energy Associates, U.S.A.

Non-Isothermal Heat Treatment Experiments and Model of Coal Pyrolysis Kinetics

L. Shengyu, Z. Wei, H. Wei, and X. Kechang
Taiyuan University of Technology, P.R. China

TRACK 4 - TOPIC B
Gasification Fundamentals I

Mathematical Model to Coal Gasification and Combustion Process In Fluidized Bed

F. Chejne and J.P. Hernandez
Pontificia Bolivariana University, Colombia

The Effect of Volatiles on Char Conversion in a Fluidized-Bed Gasifier

D. Ross, H.M. Yan, and D.K. Zhang
CRC Clean Power from Lignite, Australia

Theoretical Simulation of Gasification Characteristics in Entrained Flow Gasifiers

H. Liu, C. Chen, and T. Kojima
Seikei University, Japan

Reduction and Sulfidation Behavior of $ZnFe_2O_4$ Hot Gas Desulfurizer

C.H. Li, L.Y. Piao, Y.X. Li, K.C. Xie, J.S. Guan, H.L. Fan, W.L. Hu, and Z. Yan
Taiyuan University of Technology, P.R. China

Agenda

Parallel Sessions 8:30 a.m. - 10:00 a.m.

TRACK 5 - TOPIC B
Mechanistic Studies

Modelling of Char Gasification Reactivity: The Effect of Char Structure

G. Liu, J.A. Lucas, and T.F. Wall
The University of Newcastle, Australia

Evaluation of Thermal Effects Affecting the Colombian Coal Behavior the Devolatilization and Combustion Reactions

F.C. Janna and J.P. Hernandez
Pontificia Bolivariana University, Columbia

Some Aspects of Coal Utilization and Environmental Aspects in Coal-Mining and Processing Regions

L.A. Kost, M. Ya. Shpirt, V.P. Paranosenkov, F.N. Strizko, and L.N. Lebedeva
Fossil Fuels Institute (FFI), Russia

Mechanistic Investigation into the Decarboxylation of the Sodium, Potassium, and Calcium Salts of Aromatic Carboxylic Acids and Their Role in Cross-Linking Reactions

P.F. Britt, A.C. Buchanan III, and T.W. Clayton, Jr.
Oak Ridge National Laboratory, U.S.A.

TRACK 6 - TOPIC E
Particulate Emission and Control IV

Characterization of a Rigid Barrier Filter System

T. Chiang, E.M. Saab, P.C. Yue, G.F. McDaniel, and K. Warnick
U.S. Department of Energy,
National Energy Technology Laboratory, U.S.A.

FeCrAlY Fiber Composite Candle Filter for Clean Coal Application

L. Lu, *Technetics Corporation, U.S.A.*
T. Chiang, *U.S. Department of Energy,*
National Energy Technology Laboratory, U.S.A.

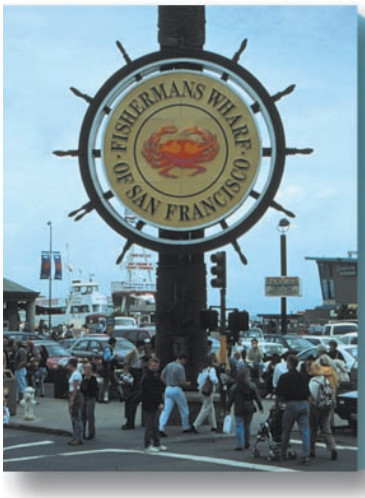
XAFS Spectroscopy Analysis of Selected HAPs Elements in Fine Particulate Matter (PM) from Coal Combustion

G.P. Huffman and F.E. Huggins
University of Kentucky
T. Shoji, *Akita University, Japan*
W.P. Linak and C.A. Miller
U.S. EPA National Risk Management Research Laboratory, U.S.A.

Hot-Gas Filter Media Concepts Notably for PFBC & IGCC Applications, A Worldwide Review of State of the Art Technology

L. Bergmann
Filter Media Consulting, Inc., U.S.A.

10:00 a.m. - 10:20 a.m. **Break**



Fisherman's Wharf

Oakland-San Francisco Bay Bridge

Photos by Phil Coblentz, courtesy of SFCVB

Sessions Resume 10:20 a.m. - 12:00 p.m.

TRACK 1 - TOPIC F
Processing Studies I

Hydrogen Production by Integrating Gasification and CO_2 Absorption (HyPr-RING)

S.Y. Lin and M. Harada, Institute for Energy Utilization, Japan
Y. Suzuki and H. Hatano, National Institute of Advanced Industrial Science and Technology, Japan

Strategy for the Reduction of Carbon Oxide Emissions from the Blast Furnace-Coke Oven System by Auxiliary Fuel Injection

W.P. Hutny, J.A. MacPhee, and J.T. Price
CANMET Energy Technology Centre, Canada

Heavy Coal Liquids Processing with Water-Steam in the Presence of Haematite Catalyst

B.N. Kuznetsov, V.I. Sharypov, N.G. Beregovtsova, and S.V. Baryshnikov
Institute of Chemistry & Chemical Technology SB RAS, Russia

Study of Coal- G- Butyl Arylate Composite Material of Solid Phase by Planetary Milling

L. Zhuannian, Z. Anning, and G. Lingmei
China Material Research Society, P.R. China

TRACK 2 - TOPIC D
Coal Preparation - Miscellaneous Studies

Mathematical Model to Simulate a Hydrocyclone for Coal Beneficiation

J.M. Barraza, E. Bueno, and A. Monge
Universidad del Valle, Colombia

Combustion Reactivity of Beneficiated Coal Obtained From Hydrocyclone Separation

J.M. Barraza and A.F. Rojas
Universidad del Valle, Colombia
M. Urhán and A. Chávez
Escuela de Ingeniería de Recursos Naturales y Medio Ambiente Columbia

Ozone Treatment of Unburned Carbon Surfaces in Fly Ash

X. Chen, Y. Gao, I. Kulaots, E. Suuberg, R.H. Hurt
Brown University, U.S.A.
A. Mehta, Electric Power Research Institute, U.S.A.

Coal Desulfurization by Thiobacillus ferrooxidans with Special Reference to the Various Aerating Systems

P. Gsiorek and J. Gsiorek
Institute of Inorganic Chemistry, Poland

TRACK 3 - TOPIC B
Pyrolysis IV

Soot Formation During Coal Pyrolysis

H. Zhang, S.T. Perry, and T.H. Fletcher
Brigham Young University, U.S.A.
M.S. Solum and R.J. Pugmire
University of Utah, U.S.A.

Interstructural Mobility of Coal Substances and Texture of Cokes

S.A. Aipshtein and V.V.Malkova
Institute of Fossil Fuels, Russia
O.I. Suprunenko
Russian University of Chemical Technology, Russia
R. Sakurovs
CSIRO Energy Technology, Australia

Interactions between Coals in Binary Blends during Heating as Studied by Thermal Rheology, PMRTA, TG-FTIR and Optical Microscopy

J.A. MacPhee, J. Giroux, J.-P. Charland, and J.T. Price
CANMET Energy Technology Centre, Canada
R. Sakurovs
CSIRO Energy Technology, Australia

Biomass Conversion to Solid Fuels Using the Rotary Kiln Process

W.A. Klose
Kassel University, Germany

TRACK 4 - TOPIC B
Gasification Fundamentals II

Calcium Based Liquid Phase Formation in Pressurised Gasifier Environments

N. Paterson, D.R. Dugwell, and R. Kandiyoti
Imperial College (University of London), United Kingdom
S. Elphick, University of Edinburgh, Scotland

On the Catalytic Behavior of Limestone and Dolomite During Sream Gasification. Surface Characterization and Comparison with Pure Oxides

N.A. Alarcón, X. García, and A.L. Gordon
Universidad de Concepción, Chile

Reactivity of Coal Chars to Carbon Dioxide at High Temperatures-Effects of Heating Conditions During Carbonization

T. Kojima, M. Toyota, M. Nakamura, and S. Uemya
Seikei University, Japan
C. Luo and H. Liu, Research fellow(s) of NEDO (New Energy and Industrial Development Organization), Japan

Study on the Predicting Technique of Ash Deposit and Growth in a Coal Gasifier

K. Ichikawa, H. Watanabe, M. Otaka, and J. Inumaru
Central Research Institute of Electric Power Industry, Japan

Sessions Resume 10:20 a.m. - 12:00 p.m.

Track 5 - TOPIC E
NO_X Emissions and Controls III

Transient Phenomena Found in NO Oxidation at Ambient Temperature over Pitch Based Activated Carbon Fiber

N. Shirahama, K.H. Choi, T. Enjoji, Y. Korai, I. Mochida, and T. Shimohara, Kyushu University, Japan
M.S. Hyun, Korea Institute of Energy Research, Korea
M. Tanoura, Mitsubishi Heavy Industries, Ltd., Japan
M. Nakamura, Fukuoka Institute of Health and Environmental Sciences, Japan

Release of HCN and NH_3 During Coal Pyrolysis in Different Reactors

L. Chang, W. Bao, J. Ren, and K. Xie
Taiyuan University of Technology, P.R. China

Distribution of Coal-N During the Gasification of Loy Yang Brown Coal

L. Chang, Monash University,
Australia and Taiyuan University of Technology, P.R. China
Z. Xie and C.Z. Li, Monash University, Australia
K.-C. Xie , Taiyuan University of Technology, P.R. China
* *Hongwei Wu,* Monash University, Australia

TRACK 6 - TOPIC E
Chemicals

Humic Acids from Oxidatively Altered Bituminous Coal

Z. Klika, M. Kurková, and M. Ritz
VSB-Technical University Ostrava, Czech Republic

Study on Synergism of Coal-Based Acids on Monocrotophos

C. Zhang, S. Li, B. Li, and W. Li
Institute of Coal Chemistry, Academy of Sciences, P.R. China
Q. Zhang
Institute of Plant Protection of Shanxi Academy of Agricultural Science, P.R. China

Bitumen Production from Kansk-Achinsk Brown Coal Flash Pyrolysis Tars

I.Y. Petrov
Siberian Branch of Russian Academy of Sciences, Russia
B. G. Tryasunov, V. N. Dopshak, O. V. Zolotaryov, and E.A. Zolotukhin
Kuzbass State Technical University, Russia

12:00 p.m. - 1:30 p.m. **Lunch**
Chairman's Remarks:
Mildred Perry, Conference Chairman, U.S. Department of Energy, National Energy Technology Laboratory

San Francisco Night Skyline

Transamerica Pyramid

Photos by Phil Coblentz, courtesy of SFCVB

Parallel Sessions 1:30 p.m. - 4:00 p.m.

TRACK 1 - TOPIC A
Coal Solubility and Depolymerization

Macroscopic Observation of Gel to Sol Transition of Coal Extracts and Solvent Mixtures

K. Norinaga, M. Suzuki, and M. Iino, Tohoku University, Japan

Mechanism of Coal Softening - Concept of Continuous Dissolution from Light to Heavier Components in Coal

T. Takanohashi and T. Yoshida, National Institute of Advanced Industrial Science and Technology, Japan
M. Iino, Tohoku University, Japan
K. Katoh, Nippon Steel Corporation, Japan

Effect of Aggregation States on Physical Properties of Coal Soluble Constitutes in Solid State

H. Shui, K. Norinaga, and M. Iino, Tohoku University, Japan

Dissolution of Coals by Heat Treatment in Organic Solvents at 175–300 °C

M. Iino and C. Li, Tohoku University, Japan
T. Takanohashi, National Institute of Advanced Industrial Science and Technology, Japan

Reactions of Coal with Polymers

P. Straka, J. Náhunková, J. Endrýsová, and H. Zubková
Institute of Rock Structure and Mechanics ASCR, Czech Republic

TRACK 3 - TOPIC B
Pyrolysis V

Study on the Precursor of Hard Carbon During Pyrolysis of Carbonous Materials in Arc Plasma

T.Y. Jun, W.D. Zhi, L.H. Bin, Z.S. Yu, and X.K. Chang
Taiyuan University of Technology, P.R. China

Distribution of Fuel Nitrogen in Pyrolysis Products

Y. Xianfeng, L. Meirong, R. Jun, Z. Suyu, and X. Kechang
Taiyuan University of Technology, P.R. China

Pyrolytic Desulphurisation of Selected Turkish Lignites

S. Özdoðan and D. Uzun, Marmara University, Turkey

Effects of Ca-Based Additives on Sulfur Distribution During Pyrolysis of Datong Coal

R. Guan, W. Li, and B. Li,
Chinese Academy of Sciences, P.R. China

A Study of Nanostructural Carbon Materials with High Surface Area Derived from Humic Coals

C.N. Barnakov, A.P. Kozlov, S.K. Seit-Ablaeva, S.I. Uskov, V.G. Dodonov, and V.M. Pugachev
Institute of Coal & Coal Chemistry SB RAS, Russia

Experimental Investigations of Coal Pyrolysis in an Inert Atmosphere under High Heating Rates

B. Henning, V. Scherer, and H. Kremer,
Ruhr-Universität Bochum, Germany
Th. Kellerhoff, Degussa AG, Germany

TRACK 2 - TOPIC D
Coal-Oil-Water Interactions

Effect of Emulsion Characteristics on GranuFlow Process Performance

Wu-Wey Wen and R.K. Killmeyer, U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.
D.J. Akers and Z. Zitron, CQ Inc., U.S.A.

Upgrading of Heavy Crude Oil by Means of Interactions with Coals

L. Pacheco, J.M. Rincón, J. Bello, A. Cabrera, and L.E. Henao
Universidad Nacional de Colombia, Colombia

Production of New Solid Fuels from Coal, Biomass, and Wastes

D.J. Akers, Glenn Shirey, and Z. Zitron, CQ Inc., U.S.A.
M. Nowak and C. Maronde, U.S. Department of Energy, National Energy Technology Laboratory, U.S.A
*** I. Naruse, Toyohashi University of Technology*

The Interior Effecting Mechanism Model of The Oil Based COW

H. Zhu, X.M. Qi, and X.L. Lu, China University, P.R. China
D.Z. Wang, Beijing General Research Institute for Non-Ferrous Metals, P.R. China

The Research on the Acting Forces Between the Coal and the Binder in Briquette

Y.L. Zhao, H.Y. Chang, D.G. Ji, Y.Z. Liu, and J.F. Wu
Taiyuan University of Technology, P.R. China

Preparation and Rheological Properties of Light Oil-Water-Coal Triplex Synfuel

H. Zhu and X.H. Yan, China University, P.R. China
D.Z. Wang , Beijing General Research Institute for Non-Ferrous Metals, P.R. China

TRACK 4 - TOPIC F
Processing Studies II

Study of Gasification Technology Applied to Coal and Plastic Wastes Mixtures

F. Pinto, R.N. André, C. Franco, C. Tavares, M. Goodman, I. Gulyurtlu, and I. Cabrita, INETI-DTC, Portugal

Engineering Design Model for Circulating Fluidized Beds and Transport Reactors

J.G. VanOsdol and L.J. Shadle, U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.

Mapping Combustor Performance with Neural Networks

J.R. Shultz, U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.

Description of a Gasifier Model for Transport Reactor and Application to The Power Systems Development Facility

S. Katta, P.V. Smith, and G.B. Henningsen
Kellogg, Brown & Root, U.S.A.
P. Vimalchand, Southern Company Services, U.S.A.
J. Longanbach, U.S. Department of Energy, National Energy Technology Laboratory, U.S.A.

Parallel Sessions 1:30 p.m. - 4:00 p.m.

TRACK 5 - TOPIC E
Trace Elements and HAPS V

Trace Element Release During the Co-Combustion of Coal and Biomass in a Suspension-Firing Reactor

R. Kandiyoti, B.B. Miller, R. Richaud, and D.R. Dugwell
Imperial College (University of London), United Kingdom

Homogeneous Oxidation of Hg in Coal-Derived Exhausts

S. Niksa, *Niksa Energy Associates, U.S.A.*
J.J. Helble, *University of Connecticut, U.S.A.*
N. Fujiwara, *Coal Research Laboratory, Japan*

Concentration of Trace Metals Inside Coal Pulverizers

R.R. Oder, E.D. Brandner, and R.E. Jamison
EXPORTech Company, Inc., U.S.A.

Pilot-Scale Research at NETL on Mercury Measurement and Control

W.J. O'Dowd, R.A. Hargis, and H.W. Pennline
U.S. Department of Energy,
National Energy Technology Laboratory, U.S.A.

Measurement and Modeling the Effect of Near Burner Aerodynamics on the Emissions of Heavy Metals from the Co-Combustion of Sewage Sludge and Coal in a Pulverised Fuel Fired Combustor

K. Clark, P. Costen, D. Dajnak, P. Harrison, F.C. Lockwood, S. McPhail, and S. Yousif
Imperial College of Science, Technology & Medicine

Electromagnetic Conductivity and Thermal Infrared Imagery to Delineate Groundwater Flow and Discharge at Subsurface Coal Mines

T.E. Ackman, *U.S. Department of Energy,*
National Energy Technology Laboratory, U.S.A.

TRACK 6 - TOPIC E
Management of Coal Utilization By-Products

Production and Uses of Coal Combustion Products

R.S. Kalyoncu and B. Stewart
U.S. Geological Survey, U.S.A.

Fly Ash as a Chemical Scrubber for Acidic Wastes

M. Polat, *Dokuz Eylul University, Turkey*
Ben-Gurion University of the Negev, Israel
H. Cohen
Ben-Gurion University of the Negev NRCN, Israel
E. Lederman and I. Pelly
Ben-Gurion University of the Negev, Israel

The U.S. DOI, Office of Surface Mining: Initiatives Related to Coal Combustion Products (CCPs) and By-Products (CCBs)

K.C. Vories, *USDI Office of Surface Mining (OSM), U.S.A.*

Utilization of Coal Combustion Waste for the Production of Activated Carbons

Z. Lu, Y. Zhang, M.M. Maroto-Valor, J.M. Andrésen, and H.H. Schobert
The Energy Institute, The Pennsylvania State University, U.S.A.

Occurrence of Hexavalent Chromium in Israeli Fly Ash and Its Leaching Behavior

S. Sheps-Pelleg
Ben-Gurion University of the Negev, Israel
H. Cohen
Ben-Gurion University of the Negev, NRCN, Israel
R.B. Finkelman
U.S. Geological Survey, U.S.A.
M. Polat
Dokuz Eylul University, Turkey
F. Huggins
University of Kentucky, U.S.A.

4:00 p.m. - 4:10 p.m.	Reconvene in Plenary Hall / General Session
4:10 p.m. - 4:40 p.m.	**Closing Ceremony:** James Ekmann, Chairman, National Scientific Program Committee, U.S. Department of Energy, National Energy Technology Laboratory
	Representative of Australia, W.R. Jackson, Director, Centre for Green Chemistry, Monash University
4:40 p.m.	IOC Meeting (by invitation only)

Exhibit

Exhibit Hours

Sunday, September 30, 2001	5:00 p.m. - 7:00 p.m.
Monday, October 1, 2001	10:00 a.m. - 5:30 p.m.
Tuesday, October 2, 2001	9:15 a.m. - 5:30 p.m.
Wednesday, October 3, 2001	9:15 a.m. - 4:00 p.m.

Exhibitors

USGS (US Geological Survey)

Robert B. Finkelman
956 National Ctr.
MS 956
Reston, VA 22092
(703)648-6412

The U.S. Geological Survey

Created by an act of Congress in 1879, the U.S. Geological Survey (USGS) stands as the sole science agency for the Department of the Interior. It is sought out by thousands of partners and customers for its natural science expertise and its vast earth and biological data holdings. The USGS is the science provider of choice in accessing the information and understanding to help resolve complex natural resource problems across the Nation and around the world.

The USGS serves the Nation as an independent fact-finding agency that collects, monitors, analyzes, and provides scientific understanding about natural resource conditions, issues, and problems. The value of the USGS to the Nation rests on its ability to carry out studies on a national scale and to sustain long-term monitoring and assessment of natural resources. Because it has no regulatory or management mandate, the USGS provides impartial science that serves the needs of our changing world.

The diversity of scientific issues that demand attention has prompted the USGS to focus its efforts into four major areas: natural hazards, resources, the environment, and information and data management. The future of the global community presents unprecedented opportunities for the science of the USGS to continue to make substantive and life-enhancing contributions to the betterment of the Nation and the world.

The Pittsburgh Conference

Home Page: http://www.pittcon.org
First and foremost, the Pittsburgh Conference is about science. It's a truly global event that annually brings together more than 30,000 conferees and exhibitors from more than 120 countries. You'll find that the breadth of technology is global as well-showcasing 'the latest and greatest' new products in virtually every laboratory discipline, from life sciences and biotechnology, to analytical chemistry, to food sciences, to pharmaceutical technologies...and more!

Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy

(A Pennsylvania Non-Profit Corporation)
Bill Schell
300 Penn Center Blvd.
Suite 332
Pittsburgh, PA 15235
1-800-825-3221

Pittcon is also about learning. Our comprehensive technical programs and short courses are a rich source of practical scientific information that perfectly complements the vast Exposition. More than 1300 Exhibitors, ranging from unique niche companies to the industry giants will showcase their newest state of the art products and services. No matter which field you're in, you're sure to come away with valuable knowledge you can immediately apply directly to your work.

Exhibit

Exhibitors

Elsevier Science

Elsevier Science is the foremost publisher of scientific journals, books and multi-volume reference works in the growing field of Fossil Fuels. Supplementing our traditional paper products are new CD-ROM and web-based products specifically designed for the Fossil Fuels community. Free on-line sample copies of our journals are available and further information regarding our books programme. Further information about our products and services can be found via the Internet:

www.elsevier.nl / www.elsevier.com / www.elsevier.co.jp

The National Energy Technology Laboratory

The National Energy Technology Laboratory is a multipurpose laboratory owned and operated by the U.S. Department of Energy (DOE). One of DOE's 15 national laboratories, we conduct and implement science and technology development programs that span DOE's energy, science, national security and environmental quality missions.

We have more than 60 years' experience in coal, oil, and gas technologies research, and a decade of experience in nuclear cleanup technology. Our experience, our expertise, and most of all, our people make us uniquely positioned to solve today's and tomorrow's energy problems.

National Energy Technology Laboratory

U.S. Department of Energy
Kimberly A. Yavorsky
P.O. Box 10940
Pittsburgh, PA 15236
(412)386-6044

Homepage: www.netl.doe.gov

DOE's national laboratories are renowned for their cutting-edge energy research. At NETL, we conduct research and technology development to resolve the environmental, supply, and reliability constraints of producing and using fossil fuels. We also use our expertise to develop advanced technologies to clean up the environmental legacy of nuclear research and development programs - technologies that are "faster, safer, and cheaper." And we conduct analyses to support policy development and best management and business practices within DOE. Our work supports DOE's mission to advance U.S. energy, environmental, economic, and national security through leadership in science and technology.

Exhibit

Sponsors

USGS (US Geological Survey)

Created by an act of Congress in 1879, the U.S. Geological Survey (USGS) stands as the sole science agency for the Department of the Interior. It is sought out by thousands of partners and customers for its natural science expertise and its vast earth and biological data holdings. The USGS is the science provider of choice in accessing the information and understanding to help resolve complex natural resource problems across the Nation and around the world. The USGS serves the Nation as an independent fact-finding agency that collects, monitors, analyzes, and provides scientific understanding about natural resource conditions, issues, and problems. The value of the USGS to the Nation rests on its ability to carry out studies on a national scale and to sustain long-term monitoring and assessment of natural resources. Because it has no regulatory or management mandate, the USGS provides impartial science that serves the needs of our changing world. The diversity of scientific issues that demand attention has prompted the USGS to focus its efforts into four major areas: natural hazards, resources, the environment, and information and data management. The future of the global community presents unprecedented opportunities for the science of the USGS to continue to make substantive and life-enhancing contributions to the betterment of the Nation and the world.

ALSTOM Power

Contributor

ACS Fuel Division

Division of Fuel Chemistry (FUEL)/ American Chemical Society

The Division of Fuel Chemistry provides a forum for presentation and discussion of fuels-related chemistry research and development. The Division is also concerned with public policy issues related to energy and fuels, such as the environmental impacts of fuel use and the evaluation of options for resource utilization (e.g., fuel, chemical, or material). Division programming has remained strong in the traditionally important areas of the utilization of coal, natural gas, and alternative fuels and feedstocks. Programming is being increased in areas associated with the environmental effects of fossil fuel use; energy and fuel production from biomass and waste; bioprocessing of fuels; recent developments in fuel cells and batteries; and the production of high-value materials and chemicals from fuels.

Home Page: http://www.anl.gov/PCS/acsfuel/

Announcement

The 12th International Conference on Coal Science in Australia

November, 2003

We are pleased to announce that the **12th International Conference on Coal Science** will be hosted by Australia. Cairns, Queensland, Australia will be the venue of the 12th ICCS in late November 2003. Remember that this will be springtime in the southern hemisphere, and Cairns will be a most welcoming retreat. Initial planning for the 12th ICCS is underway. The venue has excellent conference facilities, a very pleasant climate, and an international airport serving Japan with direct overnight flights, the USA (direct to the West Coast), and Europe (via Singapore). The Australian Institute of Energy will be involved in the organization of the Conference. Among the many Conference activities that are expected, pre- and post-conference tours to the major export, mining, and research facilities in Queens and Southern Australia are anticipated.

Delegates will be able to get a flavor of tropical Australia. Cairns is a centre for visiting the Barrier Reef, Tropical Rain Forests and Tablelands. Each of these has unique flora and fauna.

W.R. Jackson
Sir John Monash Distinguished Professor
Director, Centre for Green Chemistry, Monash University

Telephone: 61-3-9905-4552
Email: W.R.Jackson@SCI.Monash.edu.au

Photos Courtesy of Cairns Convention Center

About the Organizers

IEA - The International Energy Agency (IEA) was established in 1974 within the framework of the Organization for Economic Cooperation and Development (OCED) to implement an International Energy Program. A basic aim of the IEA is to foster cooperation among the twenty-one IEA Participating Countries to increase energy security through energy conservation. This is achieved in part through a program of collaborative Research Development and demonstration (RD&D) consisting of forth-two implementing Agreements, comprising over eighty separate energy RD&D projects. This conference forms one element of this program.

NETL - The National Energy Technology Laboratory (NETL) is the official organizer of the 11th International Conference on Coal Science. The National Energy Technology Laboratory is a federally owned and operated Fossil Energy organization with campuses in Morgantown, West Virginia, Tulsa, Oklahoma, and Pittsburgh, Pennsylvania. We perform, procure, and partner in technical research, development, and demonstration to advance technology into the commercial marketplace, thereby benefiting the environment, contributing to U.S. employment, and advancing the position of U.S. industries in the global market.

For additional information, please visit us on the World Web at: http://www.netl.doe.gov

International Organizing Committee

Hiroshi Aida	Japan
Professor Fernando Alergia	Spain
Ms. Rita A. Bajura	USA
Dr. David E. Clarke	UK
Mr. James M. Ekmann	USA
Dr. Fari Goodarzi	Canada
Dr. Alan J. Heyes	UK
Professor W.R. Jackson	Australia
Dr. -Ing. Steffen Krzack	Germany
Professor Baoqing Li	P.R. China (Past Chairman)
Professor Zhenyu Liu	P.R. China
Professor Dr. -Ing. Bernd Meyer	Germany
Dr. Mildred B. Perry	USA (Chairman)
Mr. Ronald Steur	Netherlands
Mr. Toshio Tanabe	Japan
Dr. Koji Ukegawa	Japan
Mr. David Wallace	IEA

National Organizing Committee/USA

Conference Chairman	Dr. Mildred B. Perry
Program Chairman	Mr. James M. Ekmann
Financial Services	EG&G Technical Services
Support	NETL Event Management

National Scientific Program Committee

Mr. James M. Ekmann, Chairman, National Energy Technology Laboratory
Dr. Robert Finkelman, United States Geological Survey
Dr. Francis Burke, CONSOL Energy
Dr. Bradley Bockrath, National Energy Technology Laboratory
Professor Harold Schobert, Pennsylvania State University
Professor Roe-Hoan Yoon, Virginia Polytechnic Institute
Poster Coordinator, Mr. H.L. Retcofsky, Consultant
Assistance from other Member Countries

Photos by Phil Coblentz, courtesy of SFCVB